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THE

WESTERN JOURNAL

and Civilian.

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ARTICLE I.

History: Its Uses.

Gather up the fragments that remain, that nothing be lost.

The benefactors of a people in the earlier stages of their history have been held in veneration by the inhabitants of all countries, and a knowledge of the events connected with the rise and progress of nations has ever been regarded by their more intelligent constituents as a necessary accomplishment. Veneration for those who have labored to ameliorate the condition of their race is a natural sentiment, designed to perpetuate the influence of good men for the benefit of posterity. The example of a Leonidas sustains the courage, and nerves the arm of the patriot in defence of his country; while the self-sacrificing life of a Howard, and the one benevolent action of the good Samaritan, will continue to awaken sentiments of philanthropy in the hearts of millions to the end of time.

The Political Economist may do good service by investigating the sources of national wealth, and, in giving a wise direction to the legislation and industrial pursuits of a people; but it is not less important that the Social Economist should gather up the fragments of benevolence which remain of the actions of good men, and preserve them for the benefit of future ages. These constitute the true wealth, the glory of a people. The accumalated material wealth of a country is a legitimate source of gratification; and the philanthropist may be excused should he even indulge a feeling of pride, when contemplating the abundant appliances of physical enjoyment which fill the land. But all these are only the fruit gathered from seed sown by benevolent hands, and cultivated, it may be, through a period of many generations, by men who received

little reward save the pleasures arising from acts of disinterested benevolence.

The history of a people may be regarded as their moral capital, and those who have none of their own, must borrow from others, or be excluded from the ranks of civilized nations. The history of other countrtes is eminently useful; but it lacks the vital elements necessary to make a people homogeneous; for upon their own examples and achievements depend, in a great degree, their national sympathies, patriotism and social virtues. Hence the best interests of a people as well as justice to those who have passed away, demand that the actions of men who have been distinguished for their social virtues should be preserved from oblivion.

Of the social phenomena of this wonderful age, there is none more remarkable, perhaps, than the existence of civilized States without a history. It is true, only a few years have elapsed since some of these were occupied by a savage race, yet in others the first generation, the pioneers who encountered the dangers, and suffered the privations incident to a border life, have passed away.

It is time that their deeds were recorded by the historian. It has been nearly a century, since the first settlements by a civilized race were made in Missouri: and yet she is without a historian. With few exceptions, the enterprise, daring courage and privations of the French pioneers, west of the Mississippi, remain subjects of tradition. Where else could the historian find a field more fruitful of interesting incident, or where a more favorable opportunity of comparing the genius, customs and habits of different races? Although the advent of the Anglo-Saxon was of a more recent date, yet many of this race who acted a conspicuous part in subduing the country, and giving form and tone to the institutions of the State, are among the dead. Shall they also be forgotten, and the bright gems which should adorn the first pages of Missouri's history, be lost to posterity? Surely such an imputation upon the intelligence, literature and public spirit of her citizens, will not be permitted by the present generation. Missouri has awakened from her supineness in respect to the great improvements of the age, and, like a young giant just aroused to a consciousness of his strength, has entered boldly upon a career that is already attracting observation even beyond the limits of the continent; but she lacks literary and social accomplishments to grace her strength, and dignify her new position.

Wealth, without the intelligence, the virtues and social refinements which adorn humanity, brings contempt upon States as well as upon individualls; and the respect of mankind is an element of power not less necessary to the prosperity and permanent happiness of a people than industry and great physical resources. Mankind must manifest a decent respect for themselves, before they can command the respect of others. The most important element of self-respect is drawn from anticedents, and hence forgetfulness and cold neglect of those who have labored to promote the social interest, is calculated to lower the self esteem of a people, and is not less odious than ingratitude for individual favors.

The importance of collecting and preserving the scattered and perishible material of our history, has been long felt and appreciated by a few intelligent and public spirited individuals, but has not been sufficiently impressed upon the common mind. "In pursuance of a notice which was published in the newspapers of the City of Jefferson, a number of gentlemen assembled in the Senate chamber of the capitol of Missouri, on Wednesday, December 18th, A. D. 1844, for the purpose of forming a HISTORICAL AND PHILOSOPHICAL SOCIETY.

George W. Hough was called to the chair, and James L. Minor was appointed Secretary.

The chairman, Messrs. William M. Campbell, H. P. Goodrich, and John J. Campbell severally addressed the meeting—explaining the intention and objects of the society."*

At this meeting a constitution was adopted, and by an act of the Legislature, passed in February, 1845, the Society was incorporated.

By the second section of the charter it is declared that

"The objects of the Society shall be to collect, embody, arrange and preserve in an authentic form, the materials for the history of this State, to accumulate a library of books, pamphlets, maps, charts, manuscripts and papers, a cabinet of ores, minerals, fossils, and other natural productions; and a museum of relics, curiosities and other articles that may illustrate the history of the country. It shall be an object of the Society to rescue from oblivion the memory of the early pioneers of this State, and to obtain and preserve in an authentic form the history of their exploits and perils; and it shall exhibit in their true light the resources of

* Vide Annals of the Missouri Historical and Philosophical Society, number 1.

the State. It also may take proper steps to promote the study of history, and to diffuse and publish information relating to the description and history of Missouri."

Had the objects contemplated by this section of the charter been prosecuted with efficiency, the early history of Missouri might have been written and published before the present day; but it would have been unreasonable to expect that the society, composed chiefly of individuals actively engaged in the ordinary pursuits of life, could have achieved the objects proposed without an appropriation of pecuniary means placed at its disposal. The State made no appropriation to aid in carrying out the praiseworth designs of the philanthropic and public spirited citizens who originated and formed the society—much however has been done. But the Society has not nor is it probable that it ever will "collect, embody, arrange and preserve, in an authentic form, the materials for the history of this State," in a manner that will do justice to the subject unless a reasonable amount of money shall be devoted to that service.

The Society is composed of individuals highly intelligent, men of influence residing in various parts of the State, and if they would act in concert in soliciting aid from the General Assembly, there is scarcely a doubt that it would be granted: and if judiciously applied, no appropriation of equal amount that could be made, would be more honorable or useful. A few thousand dollars placed at the disposal of the Society, and judiciously managed, would accomplish a great deal in a short time. We trust that the Society will not permit another session of the General Assembly to pass by without an effort to place itself in a condition to carry out the objects for which it was instituted. And, in the mean time, it will afford us a high degree of pleasure to do all we can to promote the objects aimed at by the founders of an institution calculated to reflect so much honor upon the State.

In the Introduction of the first number of the "Annals of the Missouri Historical and Philosophical Society" we find its objects enumerated and set forth; from which we make the following extract:

"The Society also desires that the early and local history of the State may be written by persons competent to the task, and furnished for its use. The history of the early French and Spanish settlements at New Madrid, Ste. Genevieve, St. Louis, St. Charles, Portage des Sioux, Mine Breton, Cote Sans Dessein, and

other places, would be interesting,—as would also an account of the emigration that came from New Orleans, Canada and elsewhere; and of the location and condition of the various Indian tribes when the first white settlements were made. Accounts of the early voyages, travels, trading expeditions, adventures, exploits and escapes of the early settlers, would be read with pleasure. Accurate details of the Indian wars, conflicts, alarms, and treaties, would form interesting chapters in the history of the State. A description and history of the various posts and forts that existed at early times, is desired. The beography of the pioneers—Laclede, Piernas, Cruzat, Libya, St. Ange, Delassus, Trudeau, Soulard, Mackay, Chouteau, Cerre, Pratte, Lisa, La-Beaume, Musick, Delaurier, Tayon, Blanchard, Clamorgan, and many others—would be a valuable addition to our history. The number and extent of the early French and Spanish settlements, and the date of their formation, should be ascertained and perpetuated in an authentic form. The history of the territory immediately before, at and after the treaty of cession, should be carefully written. The provincial form of government, the mode of granting lands, and laying out villages, and the system of gov. ernment and police before the session, are worthy of investigation. The biography of the prominent men who came into office when this territory was transferred to the Americans, should be preserved. The conduct, character and history of Stoddard, Clarke, Lucas, Penrose, Bates, McNair, Ashley, Hempstead, Easton, Gray, Callaway, Cooper, Cole, and many others, should be written out. The events of the war of 1812, and the accompanying Indian troubles, the adventures of the ranging service, the border conflicts with the savages, such as those that occurred at Loutre, Cote Sans Dessein, and Chain of Rocks, ought to be minutely given as a part of the history of the country. The territorial history of the country deserves attention—the territorial legislation and executive and judicial action under all the successive forms and grades of government will be interesting—the gradual progress from the civil to the common law should be traced out, and the men and measures of the territory properly described. Such men as Cousins, the Bartons and Rectors, Strother, Giddings, Emmons, McGirk, Tompkins, Pettibone, are entitled to a place in our territorial history. The task of tracing the progress of settlement and improvement in each section of the State, will be full of interest; and the early efforts at mining, smelting and manufacturing would not be devoid of interest. The history of the Regulators may receive a passing notice. The transition from the Territorial into a State government—the formation and adoption of the State Constitution—the conflicts of opinion that existed in the Convention—the anecdotes and incidents of its session, and the circumstances that attended the admission of the State into the Union, and the organization of the State government, con-

stitute an important chapter of our history. The early legislation of the State, the choice of officers, the selection of U. S. Senators, the constitutional amendments, the stop laws, and the loan office, are subjects worthy of notice."

"The history of the early trade and commerce of the territory, —the Indian trade—the navigation by perogues and keel boats, —the change, effected by the introduction of steam boats,—the system of barter and exchange—the peltry currency—the Bank of St. Louis, and the old Bank of Missouri, are subjects that could be properly woven into the regular history of the State. The origin, growth and progress of the Rocky Mountain and Santa Fe trade, are fair subjects for historical research. The foundation and progress of the various towns and cities of the State, are parts of our local history. Biographies of all our former Governors, Judges and prominent officers, are desired. All this mass of general and local history can easily be obtaiaed, if the persons who possess the information will take the trouble to write it down, and furnish it to the Society, so that it may be arranged in proper form for publication. A large number of books, pamphlets, letters, manuscripts and files of newspapers are in the possession of individuals, and are nearly useless to them, but if contributed to the Society they would form a valuable addition to its collection."

We make the foregoing extract with a hope that some of our readers are in possession of facts relating to some one or more of the subjects enumerated, and that they will find it convenient to give them to the public, either through the medium of the "Missouri Historical and Philosophical Society," or through our Journal.

There are many reasons in favor of publishing the matter referred to in the Western Journal and Civilian, rather than depositing it in the archives of the Society, where it will remain concealed from the world for perhaps another generation. If published at once, the facts will be subjected to the scrutiny of those who are capable of judging of their credibility; and in case they should pass unquestioned, it would entitle them to more confidence, than if their publication were delayed, until the present generation shall have passed away. A few interesting contributions would incite others to come forward; and there is reason to suppose that in this way many valuable facts would be brought out, which would never be made known to the Historical Society.

One of our chief objects, from the beginning, has been to make the Western Journal a repository for the preservation of facts connected with the history of the Mississippi Valley including its entire area. The tenth volume of the work is now in course of pub-

lication. It is preserved in a durable form in the principal libraries (public and private) of the country; and whatever may be its merits, it is likely to go down to a remote posterity. Hence contributors to our pages have at least a reasonable assurance that their literary labors will not be lost, and that their names will be found in the history of this mighty region long after the monuments which wealth erects to its own memory shall have decayed. These suggestions do not originate in a desire to prevent any individual from contributing to the Missouri Historical and Philosophical Society; so far from it, we will, after publication, cause the manuscripts of all historical articles to be deposited in that institution, if requested by the author. Thus, their names will be recorded as contributors to the Society, and their manuscripts preserved; while they and the public will respectively enjoy the benefits of their labors.

Let it not be said

> "The evil that men do, lives after them;
> The good is oft interred with their bones."

Such a state of things is opposed to the true principles of social economy, and "a reproach to any people."

There is a merit in the publication of benevolent actions which has not, as we believe, been sufficiently insisted upon, or appreciated by the teachers of ethics.

The good deeds of men possess a quality which fructifies and quickens the minds of others, causing them to produce similar fruit, but affects those only who are cognizant of the deed. Hence the publisher is a social benefactor disseminating the seeds of virtue in the hearts of the people. And though some may fall in stony places, and some by the way side, and perish, yet let him not withhold his hand; for he that conceals or neglects to make known a meritorious action, does injustice to the author, and sins against society.

Then let us gather up the fragments of history which lie scattered throughout the land. They will present a rich field for the study of the social economist, philosopher and statesman, and constitute a permanent source of gratification and instruction to all. They will serve to connect the past with the present and future condition of the country, and rescue many worthy names and noble deeds from oblivion.

ARTICLE II.

From the Little Rock "True Democrat."

Arkansas Slate.

PROF. WARDER'S GEOLOGICAL REPORT.

To the President and Members of the Cincinnati and Little Rock Slate Company.

GENTLEMEN:—In pursuance of your instructions, I left Cincinnati on the 5th of February, and proceeded with all dispatch to Arkansas—reaching Little Rock on the 15th. Here I immediately devoted myself to the investigation of the subject matter in hand, and explored thoroughly the rocky formations of the country, but especially the slate rocks, and those intimately associated therewith. Their real consociation was not an easy matter at once to unravel, nor was it easy directly to comprehend the upheaving forces that have at one period, so remarkably upturned the strata. Here, however, as well as in my further investigations, I gladly embraced the happy opportunity that accidentally offered, of enjoying the company and assistance of Dr. George Shumard, the eminent Geologist of Arkansas, who, indeed, has had opportunities of studying the rocky strata of this young State, old in formations, and rich in mineral wealth, which, under a judicious survey, sustained by liberal outlay, she may one day have developed, when indicated by Dr. Shumard's reports.

Advantages of Position.—These consist in the inclinations of the strata and the position of the river at the base of the cliff—the stream has laid bare the rock, and left little to strip off while it is a ready recipient of the slack slate, that will form a good shingle beach for a landing. The direction of the river is not exactly parallel with the plane of the strata, hence a succession of these is shown, and may be worked. The inclination is such that an exposure of one stratum will enable the workmen to disengage the layers with very little labor, requiring much less blasting, and the consequent loss and fracture. By disengaging them below, they may be pryed up, and will slide down to the foot of the quarry.

Character of the Slate.—The rock is sufficiently indurated to form a durable roof; it is sufficiently pure to avoid decomposition by chemical action, and fissile enough to be split readily to any desired thickness.

Having made these satisfactory discoveries, my next object was to endeavor to ascertain the extent of the formation containing this valuable mineral, which appears to embrace a strip about a mile in width, extending in a direction south of west at least to the Wachita river, and perhaps much further. This forms a portion of the range of the Wachita Hills, the southern range of the Ozark Mountains. In the opposite direction, crossing the river at Little Rock, the slate extends for some little distance in a direction north of east.

In all this range, however, there are few portions where the slate

can be worked to advantage, owing to its dip, which carries it under the superincumbent sand rocks, except where the excavating forces have removed them, as is the case on the Saline and Wachita river, but more especially on the Arkansas as at Little Rock, where a larger stream has cut through the mountain, and turning laid bare an extended cliff of slate, most favorably situated for working, as the strata are nearly parallel to the course of the stream, and being inclined towards it, present the finest field for excavation. Other portions back from the river, independent of their inland situation, with the attendant difficulty and enormous expense of transportation, are generally covered with a larger portion of drift which is to be removed, besides having the inconvenience of a very small valley to receive the deposit, and they nowhere present such bold cliffs as are found upon the main stream.

Good slate has been quarried on the Saline river and near the Hot Springs on the Wachita, but the difficulties of inland transportation will always prevent their coming into competition with that quarried at Little Rock.

On the other hand, if we follow the strata across the river, we shall find this vast excavating force has entirely removed the rock in question for many miles, nor is it known again to appear except in the unfavorable position of dipping under the sand rock, as exhibited beautifully in the section made by the river cutting through the ridge known as Big Rock. On the upper end of this section, the slate again appears rising from beneath with the same disadvantageous aspect for working, also becoming confused, contorted and convoluted in a low ridge with a subordinate anticlinal axis, which forms a beautiful section of great geological interest to the student, but very unsatisfactory to the quarryman.

Having heard many vague representations of the extent of this slate formation upon the Arkansas river, and deeming it important to the interest of the Company to ascertain whether they were well founded, I considered it my duty to continue the exploration in that direction, and accordingly ascended three hundred miles to Fort Smith, cutting diagonally the whole distance through a coal basin devoid of indurated rocks, but giving good indications of bituminous coal. Beyond Fort Smith the carboniferous limestone appears in nearly horizontal strata.

Being very anxious to ascertain the upheaving force that has disturbed the strata near Little Rock, I explored the region to the South and Southwest of that city, and found indications of slate everywhere to the Southwest for some distance, till cut through by the extensively excavated valley of the Fourche, a small stream, which, however, becomes formidable when filled with the back water of the Arkansas river.

The southern border of that valley is abruptly terminated by an irruption of beautiful granite, rising into a low ridge, with an axis nearly or quite parallel to the direction of the slate.—Here was

found ample cause for the upheaval, and also for the induration of the rocks within a certain distance of the focus of heat subheaval, which such an irruption of granite undoubtedly formed, and to the Geologist, the discovery of this granite possesses the deepest interest, as it dispels all doubts as to the probable condition of the slate in question. Here is the explanation of the hardened rocks, both aluminous and silicious.

In conclusion, allow me to congratulate the Company upon the admirable facilities which are presented by the peculiar location of their excellent quarry of this valuable mineral, which we may hope to see developed at an early period, and brought to our doors—a most valuable roofing material.

N. B.—In order that the Company may form some idea of the extent of their vein of Slate, we would remark that the depth of the plunge is undoubtedly many hundred feet, a greater depth than has ever yet been worked, or indeed, it is practicable to work. We are informed that quarries have been opened in Wales to the depth of 300 feet below the surface of the earth, while the Pennsylvania Slate Company have not yet excavated over 125 feet in depth, although they have been in successful operation over 27 years, and employed 100 hands at a time in excavating.

But as a basis of a calculation, the Cincinnati and Little Rock Slate Company can depend upon a solid mass of smooth slate of at least 75 feet in thickness above the bed of the river. Multiply this by the area of the Company's vein, which is about 100,000 square feet, and we have the immense aggregate of seven million five hundred thousand cubic feet of slate, even by quarrying 75 feet deep. Multiply this by 4, and it swells the amount at a depth of 300 feet to thirty million cubic feet of slate. From a cubic foot of rock, allowing one-third for waste, a workman can split fifty good smooth slate, of sufficient thickness for roofing. This gives us a full aggregate of fifteen hundred million slate, or fifteen million square of 100 feet, of regular size for roofing, and will keep the Company fully employed, with all the resources they can bring to bear for the whole 50 years of their charter.

Upon enquiry as to the expense attending excavation, we learn that after stripping the surface, (which must necessarily be first done,) a single hand can quarry, upon an average, about one square per day, of 100 square feet, at an expense of $1.25. The freight and drayage from our wharf will not exceed $1.75 per square. Total cost, delivered in Cincinnati, $3.00 per square. This can be rapidly sold for cash in any quantity, for $6.00 per square or more, as Pennsylvania Slate now commands $8.00 per square, with no prospect of a reduction in price. Thus it will be seen that one-half of the amount from sales will be profit to the Company, and form the basis of large dividends of profits, after the quarry shall have been opened. All of which is respectfully submitted.

JOHN A. WARDER.

ARTICLE III.

From the "Railroad Journal."

Geographical, Geological and Statistical Relations of the Ohio and Mississippi Railroad.

The Ohio and Mississippi Railway, when completed, will be the central axis,—like the hub to the wheel,—in what may properly be called the Railway system of the Mississippi Valley. That system will be as grand in artificial works as that valley is vast in extent and resources. Already, ten thousand miles of railway, exceeding, in aggregate, those of all Europe, are either finished, constructing or planned, with a moral certainty of completion. On the north they connect with the great Basin of the Lakes, from the Gulf of St. Lawrence to the Arctic Plains; on the south they stretch to the Gulf of Mexico; on the east they are linked to every great city of the Atlantic, and on the west they are already rapidly tending towards the bosom of the Pacific. On a straight line between Cincinnati and St. Louis will be found a point midway between the Atlantic and the Rocky Mountains, and between the lakes and highlands of the Gulf; on that line also will be found the centre of population for that wide region, where eight millions of people already reside, and where nature has furnished abundant food and temperate climate for hundreds of millions in time to come. In every sense, therefore, natural, commercial and civil, the railway line between Cincinnati and St. Louis occupies a central and commanding position in reference to the whole railway system of the central west.

In estimating the traffic and profits of such a work we must not merely consider what we know of the present, but look beyond into some of the great elements of nature, society, industry and commerce; for the stream of business and of movement, on the artificial communications of a country, as certainly proceed by fixed laws, from the resources of nature and the arts and growth of a people in that country, as do the streams of water from their original and perennial fountain. Therefore, in discussing the problem you have submitted to me, I shall consider the subject in the following order, trusting that, if the details seem dry, you will consider that they lead to an inevitable and a satisfactory conclusion.

1. The Geographical position of the Cincinnati and St. Louis Railway.
2. The Geological elements of wealth, subsistence and population in the country traversed.
3. The magnitude and commerce of the cities connected.
4. The actual surplus productions of the country traversed.
5. Tributary Railway lines.

6. The shortened distances, by these lines, from the central cities to the seaboard.

7. Estimate of through passengers.

8. Estimate of lateral passengers.

9. Estimate of way passengers.

10. Estimate of freight derived from the surplus productions.

11. Estimate of freight derived from merchandize and manufactures.

12. Final estimate of profits.

1. GEOGRAPHICAL POSITION.

Whoever examines the geographical features of the Mississippi Valley, will at once observe that it has two great *Natural Axes*, nearly at right angles with one another. One is the longitudinal axis of the Mississippi itself, extending from the Arctic Plains to the Gulf of Mexico, in a straight line less than 1,500 miles, but by the river course 3,360 miles; the other is the transverse axis, formed by the Ohio, the Missouri and the Platte, pursuing a general course east and west. This axis is not quite so direct as that of the Mississippi; but pursues a geographical direction, substantially, at right angles with the former. The southern deflection, terminating at the mouth of the Ohio, is formed by the general declivity of the Valley towards the Gulf of Mexico. The length of this tranverse axis, from the eastern to the western mountain chains, is about equal, on a straight line, to the longitudinal axis —1,500 miles—although, by the river distances, it is more than three thousand.

The existence of these two great natural axes determines three great *principles*, in reference to all the future railway systems of the central west. These principles will exert a controlling influence over all particular works, and must have an important bearing on the line between Cincinnati and St. Louis. They are

1. Nature having formed great highways on which, naturally, all commerce flows—to which all plains incline, and where, by the aid of steam applied to vessels, a large portion of the movement of the country must go on—it follows that the railway system *must conform, generally, to those natural ones.* They must tend to supply, as far as their artificial uses go, the original purposes of these great channels. They must take the general direction of either the longitudinal or transverse axis, or they cannot supply the demands of commerce on those interior plains which descend towards those axes.

2. The Valleys of these great axes are, in consequence of their extraordinary irrigation, and the descent of the whole country towards them, the great depositories of vegetable productions, and, therefore, of food to men and animals. There, life, both veget-

able and animal, most abounds, and there movement is most necessary to life; there gravitates the means of subsistance, and there also gravitates the living population, which will produce, consume or fabricate it into the merchandize of commerce. Thus we see arise on the great tranverse axis of the Ohio and the Missouri the cities of Pittsburgh, Wheeling, Cincinnati, Louisville and St Louis, whose united population is double that of all the cities on the Lakes and the Gulf of Mexico together. The centralization of commerce and population in the tranverse valleys is double what it is on both sides, north or south, and *quadruple what it is on either one.* The existence of the great axes, therefore, has determined, as a second principle, *the centralization of population, production and commerce of these lines.*

3. It follows inevitably, from those facts, that those railways which are *nearest to and conform most to the natural axes of the country*, will have the most business, and be the most profitable, for they lie on the centres of population and production.

These are general principles which flow directly from the geographical features of the Mississippi Valley. Their application to the Cincinnati and St. Louis railway is direct and obvious. This work lies precisely on the line of the transverse axis, having avoided only the deflection of that axis at the mouth of the Ohio; but preserving the general direction of the Ohio, the Missouri and the Platte. Intersecting the Missouri Valley at its outlet, it commands the entire transit traffic of the great plain west of the Mississippi; it there proposes to transfer so much of that traffic destined eastwardly, over a straight line of less than half the length of the water course, again intersecting the Ohio at the very centre of its trade and population, it rejoins the natural axis, where it can command the trade of the east tending westwardly. In fact, it never leaves the great natural current, except to avoid its sinuosities. Such is its geographical position. The direct advantages which flow from it, are these: that the entire Raylway system of the central valley, covering two million two hundred and fifty thousand square miles, will radiate round this axial line; that no longitudinal line, connecting the basin of the Lakes with the Gulf of Mexico, can exist without intersecting this work, or its continuances; that all the great lines of the east must tend towards it, as a centre of union; that any highway hereafter constructed to the Pacific will become a continuance of this; and lastly, that by connecting the great commercial centres of Cincinnati and St. Louis, it becomes the channel into which the population, commerce and manufactures of the velley pour their united streams.

2. GEOLOGICAL FORMATION.

This is a consideration not to be lost sight of when we would estimate the traffic of railways on extending lines. In some coun-

tries we might pass over sandy plains in order to reach distant cities; in others, mountain regions, unfruitful of anything but mineral resources; in others, through land wholly arable, or in others of grassy plains. The geology of the country through which the Ohio and Mississippi railway passes is one characterized by all the elements of great wealth. At Cincinnati is nearly the centre of the blue limestone region, that which is probably more fitted to the production of Indian corn, and all the vegetable materials of food than any other section of the country. In the Valley of White River, on the Wabash, the road passes for long distances through the finest alluvial beds in the great alluvial plain of the West. In Illinois it passes through the same formation; while midway on the line it intersects a portion of the immense coal field which there crosses the Valley of the Ohio. Near St. Louis, at its western extremity, are immense bodies of iron and lead, scarcely begun to be developed, which must, hereafter, form the basis of immense manufacturing establishments. Such is the geology of the country traversed by this work, and of the neighboring sections, which must contribute to its business. Its alluvial character makes the road easier of construction, while it greatly increases the materials of its traffic. With this peculiar characteristic there is singularly united, in and around the same region, deposits of coal, iron and lead, greater in magnitude than any found equally accessible in any country.

3. THE MAGNITUDE AND COMMERCE OF THE CITIES.

Cincinnati and St. Louis, the two cities at the extremities of this line, have no rivals in the rapidity of their progress, the accumulation of their wealth or the splendor of their prospects; they stand where there is more positive power to feed men, more materials for manufacture, and greater extent of inland manufactures than is to be found at any other points in America. The adventurous merchant finds thirty thousand miles of internal coast open to his commerce, before he even reaches the ocean. The manufacturers and artizans find, spread within their reach, coal, iron, stone and timber, in quantities such as populous nations in accumulated age of time cannot exhaust. And hungry millions, in search of food and comfort, find a soil fertile in every salutary plant, abounding in every physical element of human happiness. It is such causes which have produced the rapid population of the west, and such causes will, for centuries to come, continue its growth and increase the magnitude of its cities. That the growth and prospects of Cincinnati and St. Louis may be fully understood, I present the following tables—exhibiting, in the first place, their absolute growth, and next, their growth as compared with New-York and Philadelphia, when at the same relative magnitude.

1. *Table of the population and growth of Cincinnati.*

Years.	Population.	Decennial Increase.	Increase per cent.
1800.....	750	.....	.....
1810.....	2,320	1,570	200
1820.....	9,602	7,282	314
1830.....	24,831	15,229	158
1840.....	46,338	21,507	87
1850.....	116,108	69,770	150

2. *Table of the relative growth of New York, Philadelphia, and Cincinnati.*

New York.			Philadelphia.		
Years.	Population.	Increase.	Years.	Population.	Increase.
1790	33,131	.....	1790	42,520	.....
1800	60,489	82 p. c.	1800	70,287	66 p. c.
1810	96,373	60 "	1810	96,664	40 "
1820	123,706	30 "	1820	108,116	13 "

Cincinnati.

Years.	Population.	Increase.
1820.....	9,602	.....
1830.....	24,831	158 per cent.
1840.....	46,338	87 "
1850.....	116,108	150 "

This table proves that Cincinnati has grown much more rapidly, at corresponding eras, than either New York or Philadelphia; and there is certainly nothing in the relative situation of either to show that their relative growth will not continue. In *thirty years* (at similar periods) New York increased 90,000 (275 per cent.) Philadelphia, 66,000, (159 per cent.); and Cincinnati, 106,506 (1,100 per cent.)

3. *Table of the relative growth of St. Louis.*

Years.	Population.	Decennial Increase.	Ratio of Increase.
1820.....	4,598	.....	.....
1830.....	5,852	1,255	29
1840.....	16,469	10,616	180
1850.....	82,742	66,469	400

4. *Table of the combined growth of St. Louis and Cincinnati.*

Years.	Population.	Decennial Increase.	Ratio of Increase.
1820.....	14,200	.....	.....
1830.....	30,683	16,483	116
1840.....	62,807	32,124	105
1850.....	198,850	136,043	216

The very remarkable fact is presented in this table, that the *ratio* of increase has doubled in the *last* period. The increase of New York city has never been beyond 70 per cent. in a *decennial*

period; while we find that of Cincinnati and St. Louis 216 p. c., when they had reached an average magnitude of 100,000 inhabitants! This fact proves that, as the internal commerce of the west increases it impels the growth of the marts of trade at an increased ratio, in order to distribute the products of its fertile soil and its rapidly increasing population. The combined growth of the cities of the Ohio valley, viz: Pittsburgh, Wheeling, Cincinnati, and Louisville, presents the same fact in a striking point of view; in 1810 they had 10,000 inhabitants; in 1830 60,000, and in 1850 270,000. In 1860 the commercial towns of the Ohio Valley will have a population exceeding half a million.

I shall not undertake to predict the period when St. Louis and Cincinnati will be parallel in magnitude with New York and Philadelphia; but that such a period will come, cannot be doubted by those who have attentively considered the far greater resources, and ultimate population, which will supply the elements of trade and civic employment, to the central cities in comparison with those of the seaboard. If, then, it be profitable to employ six millions of capital in railways radiating from Boston; if it be profitable to send forth railways from New York, Philadelphia and Baltimore—tunnelling the mountains—traversing the shores of the Lakes—and pursuing their devious way in pursuit of *part* only of the commerce of the west—how much more profitable must it be to unite the commercial capitals of the west, in a direct line, through that fertile garden filled with that much coveted commerce? Nothing can be plainer than the superiority of its results to those which can possibly be obtained, even on the most prosperous of those lines, in which such enormous capitals have been embarked.

4. THE ACTUAL SURPLUS PRODUCTIONS OF THE COUNTRY TRIBUTARY TO THE CINCINNATI AND ST. LOUIS LINE.

The *positive surplus* production of a country must be determined, before we can properly estimate the profits of commerce. Even then we shall fall much short of the amount which is *moved* on the transit lines; for we ascertain a surplus only by subtracting from the production the *aggregate* consumption. But it is obvious that as, even in the smallest territory, one part of the people produce for the consumption of another part—there must be—even on small surfaces, a continual *movement* of articles which enter into the aggregate of consumption. For example, every county town of Indiana or Illinois derives its food from farms, often at a great distance. A large part of that food, therefore, becomes the subject of locomotion on rivers, canals or railways. The movement of articles of *consumption*, in the States where raised, becomes therefore no inconsiderable part of railway traffic. When, then, we assume the *surplus* production of a State as the great element of its commerce, we, in fact, fall much short of what that production furnishes to that commerce. We assume the surplus,

however, as the greatest element, and make it a standard of comparison, in reference to the *freight* traffic. The following table will show the actual *production* of the States of Ohio, Indiana, Illinois and Missouri; the *surplusses*, after deducting the consumption of the inhabitants; and the actual surplusses *exported* from Cincinnati, St. Louis and intermediate places. The *proportion* of these surplusses, which will enter into the traffic of the Ohio and Mississippi railroad, I shall consider in the estimates.

5. *Table of the principal Agricultural products of Ohio, Indiana, Illinois and Missouri for* 1851.

Articles.	Ohio.	Indiana.	Illinois.	Missouri.	Total.
Corn, bushels	59.788,750	52,887,564	57,177,283	35,709,042	205,562,639
Wheat, "	30,000,000	8,200,000	10.366,000	3,233,000	51,799,000
Cattle, No.	1.116,145	608,000	678,000	546,000	2,948,145
Hogs, "	1,436,613	822,000	863,000	722,000	3,864,643
Butter, lbs.	34.180,458	12,748,186	12,605,554	7,762,124	67,296,322
Cheese, "	21,350,178	686,986	1,283,758	201,597	23,522,839
Tobacco, "	10.480,967	1,035,146	844,129	7,038,364	29,398,526
Seeds, bush.	185,598	35,083	13,439	2,182	237,022

Of this immense grain crop, and of the animals sustained by that and grass, there is a surplus, in its magnitude enormous. The surplus of wheat can be exactly ascertained by allowing six bushels to each individual of the population for the annual consumption. Of hogs and cattle fitted for market, and of whisky manufactured from corn, the surplus is very nearly known from the annual shipments. When these have all been determined, there remains a very large surplus of corn which would go to market if there were facilities of transportation. Determined by these data, the surplusses are as follows, viz:

6. *Table of Surplusses.*

	Corn, bushels.	Wheat, bushels.	Cattle, No.	Hogs, No.	Cheese, lbs.	Tobacco, hhds.	Seeds, bush.	Butter, lbs.
Ohio,	20,000000	18,000000	100000	500000	12,000000	6000	180000	5,000000
Indiana,	15,000000	2,200000	70000	300000	300000	600	30000	2,000000
Illinois,	20,000000	4,666000	80000	350000	400000	400	12000	2,000000
Missouri,	10,000000	....	60000	200000	....	9000	2000	1,000000
Total	65,000000	24,666000	310000	1,350000	12,600000	16000	224000	10,000000

The above surplusses amount to more than *three millions of tons* weight; an aggregate equal to double the whole tonnage carried on all the railroads of New York, the central railroads of Pennsylvania, and the Baltimore and Ohio railroad. How much of this immense surplus production is likely to be carried on the axial line, between Cincinnati and St. Louis, may be inferred, in some degree, from the exports of those cities.

7. ***Table of the Exports of the Leading Articles of Domestic Produce from Cincinnati, St. Louis and intermediate points.***

Flour, bbls	**1,210,000**
Beef, bbls	**60,500**

Whiskey, bbls	336,724
Salt, bbls	63,800
Small Grain, bush	2,206,000
Tobacco, hhds	31,900
Hogs, slaughtered	825,000
Corn, bush	4,000,000
Lead, lbs	20,000,000
Cheese, lbs	6,000,000
Butter, bbls	15,000
Candles, lbs	6,000,000
Cattle, head	2,000

The above articles are in weight above 500,000 tons, of which the freight will be divided among the various modes of transportation from these cities. The aggregate may serve to guide in forming a general idea of the freights of agricultural produce only, from these cities, and two or three intermediate points, on the line of this railway. We may assume, safely, that the way freight, or that which moves from point to point on the line, will fully be equal to one half of this, and there can be scarcely a doubt that the very existence of a new and facile mode of transportation, from points heretofore secluded from the avenues of locomotion, will add another half to the general aggregate. Thus, we shall find, at the various commercial points on this work, a million of tons of freight from domestic produce alone, ready to be transported to either the exterior or intermediate markets.

Domestic produce, however, forms but one part of the freight traffic of a railway, although on the fertile plains of the west, the greatest. There are two other classes of freight of great magnitude. These are the distribution of merchandise and manufactures, constituting the principal elements of *supply* to a country where agriculture is more than sufficient for its support.

The following table is an approximation to the amount of various kinds of groceries, merchandise and manufactures distributed from the ports of Cincinnati and St. Louis.

8. *Table: Distribution of Groceries, Merchandise and Manufactures.*

Coffee, lbs	16,584,640
Sugar, hhds	40,360
Molasses, bbls	75,866
Merchandise, tons	44,635
Manufactures, tons	25,009

The above articles in these cities alone, furnish about 110,000 tons, of which a much larger *proportion* will pass over the Ohio and Mississippi R. R., than of domestic; for the arrival of merchandise and the distribution of manufactures are more directly

east and west, than the distribution of produce, much o fwhich passes to the south.

We have now arrived at general data in relation to the tonnage and distribution of freight on the line of the Cincinnati and St. Louis railway, which may serve as guides in a general estimate. The surplus productions of the four States in which it lies are equal to *three millions of tons*, entirely exclusive of the immense freight of merchandise, manufactures, groceries and minerals. It is farther seen that the tonnage of distribution at Cincinnati, St. Louis and intermediate points, is equal to *one million one hundred and ten thousand tons*. The determination of these facts rests on an incontrovertible basis: the statistics of the U. S., and of the cities of Cincinnati and St. Louis, obtained with the utmost care and accuracy.* If there are errors, they are unquestionably errors of diminution and not of excess.

5. TRIBUTARY RAILWAY LINES.

By this, I mean those lines, however important and primary they may be in themselves, which by their position and connections, *must* bring traffic to this line; all lines which are lateral to this, or intersect it, from either side are of this description. So also, all continuances of this line east or west, belong in relation to *this* road to the same class. The number and extent of these will be far beyond those of any other railway in America. The reason of this is obvious, from the considerations advanced under the head of "Geographical Position." This is an Axial line, on and around which nearly the whole railway system of the Central West must radiate.

* The Annaul Review of Trade and Commerce, in Cincinnati, prepared by Richard Smith, superintendent of the Merchants' Exchange, is the most accurate commercial document I know of.

Public Lands in Missouri.

AN ACT giving the assent of Congress to the State of Missouri to impose a tax or taxes upon all lands hereafter sold by the United States therein, from and after the day of such sale.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the assent of Congress is hereby given to the State of Missouri to impose a tax or taxes upon all lands hereafter sold by the United States in said State, from and after the day of such sale: *Provided*, That the assent hereby given shall in no wise impair that provision of the compact with the said State, which declares that all lands belonging to citizens of the United States, residing without the said State, shall never be taxed higher than lands belonging to persons residing therein.

Approved, June 10, 1852.

ARTICLE IV.

From Hunt's Merchants' Magazine.

The Bearing of Physical Circumstances upon the Development of Commerce.*

"God," saith the poet, "never made an independent man." In civilized society, the mutual dependence of the individuals upon each other, is the great principle which lies at the bottom of the social fabric. And even the wildest savage derives his enjoyments and his scanty comforts, in a great measure, from his fellows. No where has man been found in a state purely unsocial. Such a state is opposed to the very principles of his nature.

In the primitive state of society, men are much less dependent upon each other than they come to be when they are more civilized. Originally, every hunter is also the maker of his own bow, and each warrior fashions for himself the wooden lance or the stone tomahawk which he carries into battle. From the skins of the animals which he kills, the former makes the coat for his back and the shoes for his feet; while the flesh supplies all the necessities of his table. But in process of time, it is noticed that different individuals do not succeed equally well in the same employment, nor the same individual in different employments. One is found to meet with a comparatively high degree of success in one branch of the business necessary to subsistence, and another in another branch. A may make a better bow than B, while B is the most skillful in its use. Should several hunters like B be found, who are more successful in the chase than in the preparation of implements for it, nothing would be easier than for them to make an arrangement with A, by which he may devote himself entirely to the making of bows and tomahawks, and thus increase his skill in this business, while the others attend only to hunting. The terms of the arrangement might be that A should fournish all the others with bows, and that in return, they should contribute to him the additional amount of game which, by the arrangement, having better implements and more time, they would now be able to take.

* We learn from a note appended by the Editor of the MERCHANTS' MAGAZINE that the following article was delivered as a lecture before the Students of Comer's Initiatory Counting Rooms, in Boston, by Mr. Comer, the proprietor and manager of that institution. The subject is one highly interesting to every intelligent mind, and is managed with ability; but we object to the conclusion to which the author arrives that "*restrictions upon Commerce always operate injuriously upon the country which adopts them.*" It is true, the natural laws of commerce suggest the idea of free and unrestricted trade. But we hold that there are laws arising out of the relations between different countries which ought to modify the natural laws of commerce, and that, unrestrained, the latter operate in favor of the strong and oppress the weak. This subject is too broad to be discussed in a note. We beg to refer those who doubt the soundness of our own conclusions to the views which we have expressed in a number of articles in the Western Journal—*Editor.*

This transaction would be a commercial transaction, and would illustrate the principles which form the basis of all Commerce. Commerce is only an exchange of one commodity for another. Wherever there is the slightest division of labor, as in the case above, there must be Commerce; for the moment a man confines himself to the production of only one or two of the necessaries of life, he ought to produce more of these than he needs for his own use, and the surplus must be disposed of to those who are not producers of the same articles; while he receives in return for these that he does not need, other articles that he does need, but which he does not produce.

Commerce commences, therefore, at an early stage of a people's progress, and it assists powerfully in the march of a nation up the hill of civilization.

But a division of labor may exist not only among the individuals of a community, as in the case supposed, but it may be found, and it is found, that whole communities, on account of their situation, or the character of the people composing them, or for some other reason, exhibit the same differences with respect to each other that single individuals do. Hence arises a Commerce between communities and between nations. Foreign Commerce arises from the fact that there is a great diversity in the character of the vegetable and mineral productions of different parts of the surface of the earth, and that the productions of all parts are required to supply the wants and gratify the tastes of civilized man. We now propose to notice some of the circumstances which influence the development of such a Commerce.

And first we observe that the productiveness of a country enters largely as an element into its commercial prosperity. This is evident from the considerations already suggested. Since Commerce is only an exchange of commodities for commodities, that country only can engage in it which possesses some commodity in quantities exceeding what is required for its home consumption. We sometimes see what may appear at first view an exception to this, in the fact that some towns on the sea-coast have a large Commerce, although situated in the midst of a sterile region, which yields to the miner or the husbandman but a scanty reward, even in return for the most careful toil. But in such a case, the Commerce is a transit Commerce, and is supported by the productiveness of a region which communicates with the consumers of its wealth by the city supposed. There is, we know, a certain amount of Commerce in the Desert of Sahara, but what would become of it if the great central plain of Africa, watered by the copious streams which flow in the Niger and Nile, and supporting a large population, should be blotted out of existence, and the supply of shining dust on its mountain sides should cease? The sand sea would no longer be navigated.

What cities in Eastern Asia have the largest commercial intercourse with Europeans and Americans? Canton, in China, the outlet of that great plain of 210,000 square miles, and supporting a population, according to Chinese computation, of 170,000,000 of souls. Calcutta, situated in the center of that fertile Indian plain, a large part of which sustains a population of 500 to the square mile. The trade of Christendom with Beloochistan and Arabia is insignificant in amount, because those countries produce little that would be saleable in the markets of Christendom, either as necessaries or luxuries. They are for the most part unproductive wastes, capable of maintaining only a thin population.

Another circumstance upon which the commercial prosperity of a country depends, is its accessibility, or the facility with which traders from abroad may reach it, and its own inhabitants may convey the products of the soil, or of their labor to foreign markets. If a region is shut out from the rest of the world by almost impassable mountains, or by wide, sandy deserts, it will suffer great disadvantages in trading with other countries. It is true that extreme fertility of soil, or peculiar richness of mineral deposits, may, and sometimes does, in a measure outweigh these disadvantages, but the inaccessibleness of a place will always operate unfavorably.

For the commodities exported from such a country, must be produced at a price sufficiently low to enable them, after the addition of the usual cost of transportation, to compete with similar products from other parts of the world; and the articles imported from other countries would become more expensive on account of the same unusual cost. But a country which has a sea-coast abundantly supplied with harbors, and which is intersected by large and navigable rivers, will evidently enjoy great advantages, both in the exportation and importation of commodities. By reason of the cheapness of transportation, imported articles will cost less on reaching the consumer than they otherwise would; and in exportation the producer may realize a larger return for his labor on the same account. And when the same individual stands in both these relations, the advantages he derives from the commercial accessibility of his place of residence will be two-fold.

It is plain that the healthfulness or unhealthfulness of the climate of a country will materially effect its commercial accessibility, for no merchant or ship owner ought to make a large sacrifice of human life, to secure even the highest profits.

Now since the development of Commerce depends so much upon the productiveness of a country, it is proper that we should inquire into the natural conditions of productiveness. They are found to depend upon the geological structure of the given locality, and the composition of its rocks. This is very obviously true in the case of mineral wealth, and we shall find, on examination, that the geological character of a country affects no less the character and

amount of vegetation. Soils are composed of the disintegrated particles of the underlying rocks, mixed with small quantities of organic matter. In truth, the difference between one soil and another is essentially a difference between the earthy part of them. The two mineral substances which enter most largely into the composition of soils, are clay and sand, and the different kind of soils arise from the different proportions in which these substances are found in them. Should the clay constitute only 10 per cent. of any soil, that soil is usually said to be sandy; it is called a sandy loam when it contains from 10 to 40 per cent. of clay; loam if there is from 40 to 70 per cent. of clay; clay loam if 70 to 85 per cent. of it is clay; strong clay if 85 to 95 per cent. is clay; and pure agricultural clay if no sand is found After these two ingredients, lime is the most abundant, generally in the form of carbonate, 5 per cent. of which constitutes what is called a marl, and 20 per cent. a calcareous soil. All these substances are obtained by the abrasion and crumbling of the underlying rocks, and the facts stated show how much influence they have in determining the nature of the soil.

The practiced geologist decides, from an examination of a country, what it is fitted to export. Is he seeking for a locality which will furnish mineral coal? He knows that this substance is not to be found in any considerable quantities below the carboniferous formation, and is, therefore, never deceived by the expectation of enriching himself with the products of imaginary coal fields among the granite and gneiss of the primary rocks. But in the proper layer of the earth's crust, he heeds every indication of the presence of this valuable mineral that falls under his observation. He knows that a granite country, where the soil lies immediately above the unstratified rocks, must, if thickly settled, import its fuel. And in order to be able to import fuel, it must export something, and that something will be whatever it can best produce: the products of the soil, if that be fertile, or like Massachusetts, its exports may consist of granite, ice, and the fruits of the unconquerable industry of its inhabitants.

Let us imagine two portions of country; one of them in which the carboniferous system is developed, has, we will suppose, but little fertility of soil, but possesses abundantly the treasures peculiar to this system, coal and the ironstone; and the other portion, which we will suppose accessible to the people of the first, but having none of the mineral treasures, and composed of different rocks from those of its system mentioned, is covered with a fertile and easily labored soil. Now allowing the inhabitants of both regions to be intelligent and to understand their true interests, we ask if it would be possible to prevent a commercial intercourse from springing up between them? Commerce will follow such conditions as certainly as any effect follows its cause. The annual vegetation of the one place will be exchanged for the ac-

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cumulated vegetation, which in the other, has been for ages preserved for the benefit of future generations of mankind.

But the productiveness of a country depends not only upon its geological formations, but also very much upon its climate. By this word is meant all "those modifications of the air which affect our senses." Of these, the most important in respect to vegetable richness are temperature and humidity. Heat and moisture are the two great atmospheric principles which influence the development of a luxuriant vegetation. Other things being equal, wherever these two exist in proper proportions, we find a more abundant growth of plants than where either is wanting or in excess. An excess of moisture, with little heat, makes a frozen waste—and excess of heat with no moisture, makes a parched waste, a Sahara. Let us, therefore, briefly examine the conditions of temperature and humidity.

The mean annual temperature of the air in any place depends, first, upon the situation of the place with respect to the great earth, that is with respect to the equator and the poles. The line of highest temperature is not coincident with the geographical equator, but is very irregular in its form, and lies almost entirely in the northern hemisphere, only a very short portion of it, to the east of Australia, being south of the equator. Proceeding from this line in either direction, north or south, we find the average temperature diminishing at the rate of about 1° Fahr. for 1° of latitude, and we find the greatest intensity of cold in the vicinity of the poles of the earth. The highest mean annual temperature known is that of Massowah, in Abyssinia, which is 87° 3' Fahr., and the lowest is that of Melville Island, which Captain Parry, in 1819-20, made to be 1° 49' Fahr. We find then a range of 80° Fahr., and within this range an almost infinite variety; and the slightest difference in the mean annual temperatures of two places causes a decided difference in their vegetable productions.

But there is another great cause of variation in temperature among different places on the surface of the earth, and it is the difference in their elevation above the surface of the sea. If we start from the level of the great ocean, and proceed upward, either on a mountain side or in a balloon, we shall find a diminution of the mean temperature at an average rate of 1° Fah. for a vertical rise of 352 feet; so that a difference of elevation between two places equal to this number of feet, makes a difference in their temperatures equal to what it would have been if they had been on the same level and had differed 1° in latitude.

We must not forget, however, that these great laws which regulate the distribution of heat, are subject to almost continual modification by the form and size of the continents, their general elevation, and by the hight and direction of the ranges of mountains which mark their surfaces. Thus the temperature of the western part of Europe is made many degrees higher than that of other

countries in the same latitude, because the form of the American continent is such as to change the direction of some of the great oceanic currents, and to throw upon the European Coast the warm water of the Gulf Stream. The snow line in the Bolivian Andes of South America, between 14° and 20° south latitude, is 2,000 feet higher than it is under the equator, on account of the greater elevation here of the mass of the land. For the same reason, on the north side of the lofty chain of the Himalaya Mountains, the line of perpetual snow is 3,000 feet higher than on the south side; the general elevation of the plain of Thibet being about 10,000 feet greater than that of the Ganges plain on the south.

Equally well defined are the great laws which regulate the distribution of moisture on the surface of the earth. By looking upon a rain-map of the world, we see the darkest colors, indicating the greatest fall of rain, in the Torrid Zone. As we approach the poles, the quantity of water falling from the clouds diminishes. In some localities near the equator, we find a fall of 300 inches, or 25 feet, in a year; while in the north of Europe the fall does not exceed 10 inches. We may also observe that some regions are entirely without rain. This sometimes results from the great law of the winds, and sometimes from the forms of the continents and the direction of the mountain ranges. For example, the rainless region of the Sahara is on the boundary between the trade winds, blowing from the north-east, and the winds of the North Temperate Zone coming from the south-west; and thus, whatever moisture there is, is blown away in all directions. On the contrary, in South America, on the Peruvian Coast, the absence of rain is caused by the position and hight of the mountain chain of the Andes; the winds here, blowing from the east, lose their moisture in crossing the high peaks of the range.

One distinction of very great importance should here be noticed. Although the equatorial regions have by far the largest amount of rain in the course of the year, yet the number of rainy days is much less here than in the temperate zones, and hence the water is not so equally and advantageously distributed. A given quantity of rain in the temperate zones, will therefore affect vegetation much more than an equal amount falling under the equator.

For the purpose of illustration, let us notice briefly the physical characters and the commercial success of one or two countries.—On the western shore of the old world there is a comparatively small island, which, from time immemorial has, with short intervals of exception, maintained an independent political existence. Sometimes it has even been the seat of a power wielded over continental kingdoms; and at this moment it is the boast of its people, that the sun never sets on the dominions of their queen. The area of its surface is 10,000 square miles less than that of the two States of New York and Pennsylvania, and yet it is known as *Great* Britain. And it is great, in population, in Commerce and

manufactures, in moral and intellectual strength, and in its remarkable history. Where shall we look for the cause of this greatness? Why should an island of such diminutive proportions take precedence of the kingdoms of the earth on land and sea?

Physically, Great Britain may be divided into three regions, having different characters. The eastern part, lying next the German Ocean, and extending westward as far as a line passing from the coast of Dorset to the coast of Yorkshire, is composed of chalk, green sand, oölitic limestone, and Oxford clay, among other rocks. No mountains are found in this part of England; and if there had been any, their tops must have been very much rounded, for the materials are too soft and crumbling for rugged crags and steep precipices. We see that the soil is calcareous and clayey, adapted to the cultivation of grain and to grazing.

In the next strip of country, extending as far west as the mountainous district, we find extensive beds of the new red sand stone, an older rock than the preceding, and immediately under it an abundant supply of coal and ironstone. The surface of this region is green and fertile, but much more hilly than the chalk country to the east, as we might, from the character of materials, expect.

On the western coast of the island we find the primary and transition rocks thrown up into mountain masses, with a rugged and sterile surface, a large part of which is fit only for sheep-pastures. Yet this tract is not without its wealth, for it yields those valuable minerals which characterize these strata, tin, lead, copper, zinc, plumbago, and a little silver.

So much for Great Britain geologically. Now, what are its meteorological advantages? It is situated in a high latitude, and would have a cheerless climate were it not that its coasts are washed by that warm stream, which, after a journey of eighteen months from its tropical home in the Gulf of Mexico, bestows upon this island a climate highly favorable to agricultural pursuits. The same cause which makes the British climate warm makes it also moist, and distributes the moisture with great equality.

No country is more accessible to the inhabitants of other parts of the world than Great Britain. It is inclosed on every side by navigable seas. Deep gulfs and estuaries indent it in all directions, and penetrate almost to its very center. The mighty ships which go down upon the great deep, glide gracefully among its corn fields and its coal mines. No climate is more favorable to health and long life, and its inhabitants exhibit in their physical and mental constitution the vigor which they inhale with its air.

Now, in view of these almost unparalleled advantages, it would require no prophet, even if her history had never been written, and her present commercial condition were unknown, to say that England would possess a Commerce scarcely equalled elsewhere. Strange, indeed, would it be if Commerce should not flourish in a

country so prolific both in mineral and vegetable treasures. And, in obedience to the great laws of nature which govern its development, a vast commerce has grown up here. Its progress was opposed in its very infancy by many a statute of Parliament and many a despotic decree of the Sovereign, (in those days when English Sovereigns were despotic,) enacted or issued for the benefit of some monopoly; and during its whole existence it has received little or no assistance from the government. But so powerful were the natural resources of the country, that the commercial interest, in spite of the injurious assaults of enemies, has continued steadily to advance, until every ocean is whitened with British canvass.

But it may be asked, is not British commerce due, in a great measure, to the manufacturing, for which the country is famous; and is it not an error to attribute it to geology and meteorology? No doubt Commerce and manufactures react upon each other and help each other forward. But let us for a moment look at the positions of the chief manufacturing towns of England, and see whether this great interest is not itself dependent upon the physical character of the country. Mr. Buckland has shown that nineteen of the large manufacturing towns on the island are situated upon the new red sandstone, in that strip of country to the east of the mountains, of which we have already spoken. Their united population cannot be much less than one and a half millions. Among them are Bristol, Worcester, Birmingham, Manchester, Liverpool and York. They lie upon those inexhaustible beds of coal, upon which their character as manufacturing towns depends. So that, whether we consider the Commerce of this country as the direct result of natural productiveness, or consider it as springing from manufacturing industry, it finally resolves itself into a dependence upon the same conditions—the physical character of the country.

The peculiar character of the great South American peninsula is so striking in respect to its fitness for Commerce, as to make it a very proper example for our present consideration. Of this grand division of the earth, we may say that it is essentially tropical. Most of its surface is in the torrid zone. It contains the largest river basin on the globe, that of the Amazon, which has nearly double the area of the Mississippi basin, the next in extent. The course of this majestic river is eastward, and it lies very nearly under the equator. It is a mighty stream, having in some places a depth of 600 feet, and a breadth, at its mouth, of 96 miles. Its immense volume of water moves along with a fall, in the lower part of its course, which is scarcely perceptible. An eastern breeze blows perennially over its surface; for here the trade winds sweep over the country to the very base of the Andes, and sprinkle their watery treasures along its whole extent. Thus moistened and warmed by the rays of a vertical sun, the basin of the Amazon is incomparably more prolific in vegetation than any other region of equal extent in the world. While Humboldt was pushing his discoveries on this river and its branches,

he sometimes found it necessary to cut away with his axe in order to find room to lie down. Now, with such a soil, and the 50,000 miles of navigation furnished by this great river and its branches, who shall attempt to set a limit to the Commerce that will be developed here, when all this vast region is reclaimed from the state of nature in which it now is? At present much of the trade of Europeans and of the United States with South America is carried on by way of the Pacific Ocean, because that hitherto the Andes mountain range has furnished a large amount of the exported commodities of the country. West of this ridge there is no vegetation to support a Commerce, except in the country of Chili. In Peru and Bolivia the trade winds, blowing westward, lose their moisture in crossing the Andes, and the western coast is left rainless, and almost dry. The western Commerce, then, evidently depends upon the mineral wealth of the mountains. But this, in case of the full navigation of the Amazon and its branches, could easily be transported eastward into the Atlantic, which would bring the trade of the whole peninsula into that great highway of European nations. Indeed, this seems to have been the intention of nature, for, while the eastern coast is studded with harbors, some of them the best in the world, on the Pacific coast we find very few, and those few, in Peru and Bolivia, exceedingly poor.

But, in looking forward to the transformation of the Silvas of the Amazon into a civilized region, we must not forget the effect which their climate and extreme fertility are likely to produce upon the people who settle there. The truth is, that the geology and climate of a country affect not only its manufactures and Commerce, but also, to a very high degree, the character of its people. Although much, and perhaps most, of the difference between us and our neighbors the Mexicans, is due to the difference in the stock from which we severally sprung, yet it cannot all be thus accounted for. Our sterile soil and rough climate have done much in the way of energizing our character here in New England. Mankind need the stimulus of necessity to make them laborious. No race, even though it have a strong infusion of Anglo-Saxon blood, can long retain its vigor in a country where nature produces abundantly for man's wants with little labor on his part. It is not unreasonable, therefore, to apprehend that the civilization of this great region may be retarted on this account.

Nothing better illustrates, however, the influence of physical causes upon Commerce than certain changes, which, from time to time, have been made in the exports and imports of different countries. A plant is sometimes introduced into a country which displaces another, previously cultivated, on account of being better adapted to the soil and climate. On the contrary, it sometimes happens that the cultivation of a plant is discontinued in a given locality, because another place has been found with physical conditions better fitted to its growth. Thus Indian corn and the potato have taken the place, in some parts of Europe, of other plants; and the latter, in particular, has become the principal article of food in some localities. At the same time, the culture and exportation of the fruits of the vine and olive have, in many parts, entirely disappeared. But the most remarkable instance of this kind is furnished by the history of the sugar culture. The sugar cane, in ancient times, was cultivated for its juice in India and

China. Afterwards, we find it introduced into the islands of the Mediterranean by the Saracens, while, at the same time, the culture was carried on in Egypt. These people also carried the plant into Spain, where sugar became an important article of export. We next find it in the Canary and Madeira Islands; and after the discovery of the New World it was introduced into the West Indies. Since this time the exportation of the article from the places previously named has entirely ceased, and we find it largely imported into some of them. How is so great a change in the commercial relations of these countries to be accounted for?

According to Humboldt, sugar will thrive best where the mean annual temperature is 70° or 77° Fahr., but it may be grown with some success where this mean is as low as 64° Fahr. Other things being equal, then, places which have a mean temperature of 76° to 77° will drive all other sugar producers from the market, and if they are sufficiently extensive, will ultimately supply all the world with this commodity. Now, the southern part of Spain and the Mediterranean islands have a mean annual temperature of 64° to 66° Fahr., and consequently, although sugar may be grown in these localities, they are only third-rate producers, and have long since retired from the competition. The mean temperature of the Canary Islands is a little above 70°, and sugar was exported here after the exportation from Spain had ceased. India has a temperature a little above the most favorable, and therefore has not attained the highest success in the culture. But the island of Cuba, and a portion of the eastern coast of Brazil, have the mean of 77°, and accordingly we find that these localities are the chief seats of the manufacture. The quantities raised elsewhere are comparatively small. If we take the produce of Louisiana at the ordinary estimates, we will find that it does not amount to one half the quantity consumed in the United States. The temperature is too low, the mean at New Orleans being only 69°.

In the history of the sugar trade we perceive the effect of inflexible natural laws. To these all human plans and regulations must yield. Suppose that Spain, while she was engaged in the cultivation of sugar, had, in order to secure that interest against competition, prohibited the importation of Sugar into the Peninsula; and to view the result in all possible aspects, suppose that by this measure, she had succeeded in crushing the business in the West Indies. What would have followed? In this case one result would have been, that all the world would have been obliged to pay a higher price for sugar than they now do. But the business would not have been crushed, and the actual result would have been that all the world except Spain would have been furnished with sugar at a low price, while her people would have been obliged to pay a high price for it, and the measure would have benefited no one except the few persons who were growers of the commodity in Spain. Thus it is with all restrictions upon Commerce, they always operate injuriously upon the country which adopts them.

The development of Commerce, therefore, depends upon physical causes. Yet it must be admitted that certain races of men, on account of superior intelligence, energy, and enterprise, seem to be better fitted to succeed in this pursuit than other races are. But it is

thought that on examination, the difference between the races, in this respect, will be found to arise more from diversity in the physical characters of the countries which they inhabit, than from any original constitutional differences. Suppose that those hardy men who first settled New England had been thrown into the interior of Africa, and the same accessions of population to have been made, from time to time, to the colony, that actually have been made in the United States, it is by no means probable that in the same time they would have made one-tenth the progress in civilization that has been made in this country. At any rate the establishment of our present Commerce in that part of the world would have been impossible; the scarcity of harbors and of navigable rivers, the unhealthfulness of the climate, the separation of the fertile spots from each other by large tracts of desert, would have absolutely forbidden it. But if we suppose the emigration to have taken place in the time of the Saxon invasion of Great Britain, we shall have a still more striking result, and we can scarcely satisfy ourselves that such a colony would have escaped almost any degree of degradation.

Commerce depends upon the physical characters of the globe, and not upon legislative enactments. Indeed, so obvious is this truth to those who have investigated the subject, that one writer of very high authority says, that the best thing which governments can do for Commerce is to let it alone. It needs the help of few laws, besides those great and universal ones by which a beneficent Creator governs the work of his hands.

ARTICLE V.

Architectural Engineering.

BY J. K. FISHER.

(From Appletons' Mechanic's Magazine.)

In a well-planned city, house, or store, there are numerous appliances which architects formerly had little to do with, and which, *therefore*, the architectural schoolman leaves to the consideration of the different men who put in the water and drain pipes, the gas-pipes, the warming-pipes or flues, and the ventilators, if any there happen to be. In consequence of this want of unity in the direction, great expense is incurred in the first instance, and perpetual derangements occur, involving frequent expenses for repairs, and damages to the building and its goods and furniture, disgust to its tenants, and great injury to its proprietor. All these evils indicate the necessity of an alliance of architecture with mechanical engineering; and, though it is possible that a mere alliance may serve for utility, it would be far better that the artistic and engineering talents should be united in the same person.

Considerations of great importance demand this union. Beauty of design cannot be preserved unblemished, if the mere engineer, still

less if the mere mechanic, be allowed to place his disfigurements wherever it suits his convenience. His gas-pipes deform every corner, his sink and drain-pipes are put where he finds most room, his water-pipes where they will freeze, his warming-pipes where they will be troublesome, and all his contrivances where they will impair whatever unity and beauty of design the academic architect may have borrowed from his illustrious predecessors. Utility, and durability, and economy of construction, alike require that the engineer should have much to do with the planning of the building. But two heads, in this case, are *not* better than one. The stupidest should be dispensed with, and the clearest should comprehend that it has a nobler function than to be a mere assistant to the boss carpenter. It should comprehend that the beautiful forms its imagination may body forth will be marred, and fulfill no useful function completely, if creative genius neglects its duty, and leaves to the stolid mind of the mere workman the organic details, without which no architectural work can much longer be tolerated.

Mechanical engineering has already become a science. It has its records, its defined principles, its books full of examples and suggestions, and the artist may soon master it, and make it his invaluable servant, instead of his troublesome enemy. Let him look to it, if he would emancipate himself from mortifying contentions with tinkers, plumbers, and other rude ministers to mere necessities, who, without his control and supervision, are like the brute faculties of a lunatic; but who, under his direction, would contribute to place architecture far above the classic models whose beauty makes him forget that art is eternally progressive.

It is but a few years since merchants were content with plain brick-work—mere boss-masonry—without symmetry, style, or attempt at beauty. That time has past, and the boss-masonry is yearly pulled down, or let to the coarsest uses. Some pretension to style is now an element required, and the *draughtsman*, if not the architect, is called upon for service, if not for direction. And when once a few examples of complete architecture, for commercial uses, are placed before the mercantile community, the abortions of the unorganized draughtsmen and craftsmen will fall to the tallow-chandlers and leather-dealers, or be pulled down, to make room for works of utility, sanctified by beauty. That time may come even sooner than dreamy schoolmen expect it, and before they are prepared for it.

I propose, in this paper, to give a few hints which occur to me, as to what is wanted in buildings for ordinary uses. But I make no pretensions to the ability to inform students *exactly* what should be done; all I expect is, to indicate what is wanted, and what, from its general absence, or its defective planning and execution, I suppose to be generally unknown or neglected.

The Hydraulic Apparatus of a city building, especially if it cover the whole lot, is of the utmost importance, and it is usually so constructed as to be frozen, to be clogged, to get dirty, to be a nuisance from its filthiness, and to make frequent or constant noise, and to get out of order. The first consideration of the architectural engineer, in his plan, should be to place his pipes where they will be protected from currents of cold air, by a thick covering of some ma-

terial that will not conduct heat. The next consideration is, that they should be safe from injury by straining, or other causes; and in order that no accident of this kind may occur, they should be of iron, of such strength that servants cannot injure them by violent punching with iron pokers, and other instruments they may use to drive through them the rubbish they throw in. Nearly all the trash in some buildings is thrown into the bath-tubs and privy-basins; and when it clogs them, it is punched until a hole is punched through the lead pipe, and the building is drenched with foul water. This drenching, after a few repetitions, exasperates the occupants of the lower part of the building, if it be a business building, and they shut off the water at night, which is the only time when it will rise to the upper floors. The water then becomes deficient, the apparatus cannot be flushed, more clogging follows, more punching, more repairs and alterations, each worse than the others, and so on until the best tenants desert the building, in which they are annoyed by intolerable stenches, and cannot at all times obtain water.

As a convenient and economical apparatus for bedrooms and office-closets, I suggest the following:—The basin to be of the height suitable for a wash-stand, so that the wash-bowl may be set upon it, and emptied in it without trouble. The self-acting valve, so much in use, should not be adopted, as they get out of order. The conical cock is more reliable. The wooden seat should be so weighted as always to remain upright, except when held down: and the axis upon which it turns should be provided with arms, from which rods should go to the arms of the cocks and basin-valve. If there be always a head of water, it will be better to have the water-cock provided with a weighted lever, and not connected with the seat-axis; the flushing will then be more effectually done by the rapid flow, and little water will be was ed, as the cock will be closed by the weight, as soon as the hand is withdrawn. The best contrivance for directing the water upon the sides of the basin is a tabular ring around the top, with slits or holes occupying a line clear round, and projecting the water, so that it will strike the sides of the basin at a very acute angle.

The urinary, which has been introduced to prevent the seat from being wet, is superseded by this arrangement of a lifting seat. A great expense, and a greater nuisance, are thus got rid of. The urinaries most in use are not flushed at all; there is a small stream of water running into them, which wet but a small portion of the bottom, and not even spatters the sides, which never get rinsed, and always smell badly. Tobacco quids, stumps of cigars, papers and miscellaneous matters accumulate, and stop the outlet. There is filling up, fermentation, overflowing, &c., &c. In short, the urinary is a worse than useless addition to the cost of a water-closet.

Ventilation in a water-closet is absolutely necessary. At present it is sufficient to say that from the basin there should be an air passage leading to the main passage through which the impure air is exhausted, and also at the top of the closet there should be another exhaust passage.

To produce a constant and ample general ventilation by the difference of the density of the internal and external columns is an impossibility. It may be much better than no ventilation; but in a large

building, where there are many persons, there should be a sure mechanical means of exhaustion. And this may serve also to produce the draught of smoke. An exhausting-fan, such as is sometimes used for steam-boilers, turned by a small steam-engine, or by any power that will work uniformly, will be a great promoter of comfort and health, and will save more than its cost.

The Warming Apparatus of a building full of lodging-rooms or offices is a matter which should be studied by the architectural engineer. Perkins's has been much approved. It is, however, more agreeable to have the warming-pipes at a temperature not much exceeding that of boiling water. Steam is preferable to hot water, when it can be as conveniently used, because the temperature is the same in all parts of the apparatus.

The complaint usually made against these modes of warming is, that they seem to make the air "close" and impure. They do not contribute to ventilation as fires do, and so the air, vitiated by respiration, becomes excessively impure; but if proper means of ventilation be adopted, no unpleasant effects will result from the apparatus.

The fresh air should enter the room just under or behind the warming-pipes, so as to be warmed before it reaches the persons in the room; and the warming surfaces should be so arranged as to radiate as much heat as possible, in order that the air may remain comparatively cool, and the warmth be derived from the radiant heat, as it is from open fires. If these precautions be observed, this mode of warming will be found as agreeable and salubrious as any; far superior to what is called the hot-air mode, in which the air is heated before it enters the room, and it will be nearly as economical as the hot air, and far more economical than separate stoves or grates.

But the effect on safety, and the cost of insurance, is of great importance. The fire that warms a whole building or a whole block, should be in a fire-proof room, under ground. If steam of a temperature not exceeding 250° be used, it cannot set fire to any substances it is likely to meet with; it may therefore be said that it would obviate nearly all the danger which arises from the usual means of warming. To reduce the danger to the least possible amount, the fire-vault should be under the back of the lot, when it is vacant, or under the street.

It may be added that nearly all the cooking may be done by the steam or hot-water apparatus: boiling, and even baking, may be done by it. If hot water be used, a downward loop in the pipe will render it easy to boil in any vessel, by placing it so that the loop will dip into it; and if steam be used, heating vessels containing water saturated with salt will serve as efficient means to boil, in any vessel that may be placed in them.

Gas Lights, being stationary, are safer than movable lights. If ground-glass internal windows be used with judgment, the expense of keeping a feeble light throughout a house, by means of the hall and stair lights, will not be much; and if this be done, movable lights will be little used.

The gas-pipe should always pass through an outer pipe large enough to carry off the smoke and heated air, and any gas that may escape. This external pipe should be inserted into the glass that

covers the light, and held firmly by elastic packing; and there should be no occasion to remove the glass, except for the purpose of cleaning. The jets should be projected downward at an angle of about 45°, and the burners so arranged as not to cast shadows where they can be inconvenient. And it may be added that plain ground-glass should be used, so as to conceal the flame from the eye, and no ornaments allowed at the lower part which can cast shadows.

Windows, in narrow streets, should reach to the ceiling, especially if the rooms be deep, otherwise the rooms are lighted only near the windows; and it is more agreeable and useful to have the light come from a source above the usual range of the eye, since it shows objects more distinctly.

Buildings that are deep should not lose the immense advantage of skylights, which will make the upper story more valuable than the one immediately under it, if they be properly designed and constructed. The rolled glass, made in plates six feet square, affords perfect security against leakage. But the boss carpenters who design skylights invariably make them as inelegant and useless as possible. They are mere tunnels, which throw an intense light upon the floor, and leave the walls in darkness. The Italian architects have designed a curved ceiling, which receives light from the skylight, so as to have an even tint, neither too light nor too dark for beauty of effect. The walls also receive an equable light; and it is usual to decorate the ceiling with distemper painting—a cheap and agreeable substitute for which the paper-stainers would furnish, if called upon.

Dumb Waiters, or shafts, with lifting platforms, for the transmission of light articles to the upper rooms, are useful in many cases. If there be a porter, as there should be in every large office building, he will receive packages, and send them up to the tenants, giving them notice by a touch of the bell, or by a call through the speaking tube. Postmen and others would be much relieved by such a help to dispatch, and the wear of stairs and shoe-leather would be economized.

In Naples, it has become usual to have a professional cook in the basement of every large building occupied by families or lodgers. He furnishes meals to those who choose to patronize him, providing all the table furniture. The dumb waiter would very much abridge his journeys, and keep his servants from making too free with small matters.

But it is not necessary, for the purpose of this article, that I should enumerate all the conveniences which an engineer could introduce into a building. It is enough to point out, as clearly as may be, the general benefit of combining with architectural talent and taste so much of the science and genius of the engineer as may be requisite to render buildings convenient, salubrious, and economical. But I cannot well omit the elegant device of Jacob Perkins, by which the power of a steam-engine or other prime motor may be transmitted to all parts of a large building or block, or even to all parts of a town.

He proposed to exhaust the air from a large chamber, from which pipes run to all parts where power is required. Engines, working with atmospheric air, exhaust into these pipes. Thus the heat and odor of oil, that are annoyances attending steam-engines, are entirely

avoided; and there is perfect safety from explosions, fires, leakages, &c. Such engines, to do the lifting in a warehouse or store, would be convenient and cheap, if it were the custom to use them; and the ventilating-fans and small engines for domestic uses, might be worked in this way without being in any way troublesome.

Were such engines in use in stores, they would lead to another improvement. There would be room for carts to enter, and receive their burdens from the hoisting apparatus, without the labor and damage which attend the tumbling of boxes over the sidewalks. All these and other conveniences will, in time, follow the architectural engineer, when he shall have established his just dominion over builders, plumbers, tinkers, and other mere workmen, whose rude tastes are beyond the control of science and reason, and whose mere bone and sinew labor needs to be directed by the brains of men of science and genius, to make it productive of any thing agreeable or economical.

ARTICLE VI.

French's Plan of Overcoming Steep Grades on Railroads.

In Senate of the United States, Mr. FOOTE made the following Report.

The select committee to whom was referred the petition of James S. French, asking an appropriation of Congress for the purpose of testing the practical value of a new plan of railroad and locomotive-engine lately perfected by him, have had the same under consideration, and, after a careful examination of the subject, beg leave to submit the following report:

The plan of Mr. French is certainly original, and is the only one known to your committee in which smooth wheels and the rails of the track are so arranged as to enable the engine to work readily and safely far higher grades than have heretofore been attempted in connexion with railway transit. This is effected by a very slight modification of the present plan, and consists in substituting pressure for weight in producing the required adhesion.

The apparatus by which adhesion to any extent desired by the engineer may be produced at pleasure, is a simple, compact mechanical contrivance, costing but a few hundred dollars, readily attached to any engine, and may be thrown in or out of gear instantly by the turning of a steam-cock. When out of gear, it is lifted some twelve or eighteen inches above the rails; and the engine in no way differs from the common locomotive, but runs read-

ily, by the adhesion due to its weight, over the level portions of the road.

This plan, therefore, adds nothing to the expense of constructing a railroad save a small increase in the weight of the rail on heavy inclines, where a large business is done; but saves time and expenditure in grading, reduces the weight of the engine, and consequently the working expenses of the road; gives greater security to railway travelling, and suggests the introduction of railroads with machinery so light as scarcely to exceed in weight the ordinary mail stage.

Surely, the present system must be regarded as greatly defective, when to express even the President's message, contained in a few newspaper slips weighing but a few pounds, it can only be done by some thirty or forty tons of machinery; and the disproportion throughout the system between the dead-weight and paying-load, whenever passengers or light articles are transported, is so great as to account readily for the great depreciation in railway stocks. This invention, by substituting pressure for weight, equalizes this disproportion, and suggests an entire change in a system which has absorbed, and is absorbing, all the floating capital of the world. It proves that millions of dollars have been unnecessarily expended; and, looking to the future, multiplies roads and distributes their advantages at a greatly reduced expenditure of time and money.

Your committee have no doubt that, on this plain, far cheaper railroads may be constructed and safely worked, with corresponding light machinery, than any now in use; nor can they doubt that, by it, an engine may be made to ascend any required grade. These things are perfectly apparent from the working model which has been submitted to our inspection, and we see nothing whatever to justify us in asserting that this invention will not accomplish all the inventor claims for it. The application of a well-established principle is so simple in this invention, we can see no reason why it will not work as well on a large scale as on a small one; and, referring to the experiments heretofore made by the inventor on this plan, our confidence is increased in the believe that he has perfected (regarding the vast interests to be affected by it) one of the most remarkable improvements of the age. He has supplied what has ever been considered as the greatest desideratum in railway motive-power—namely, sufficient adhesion for the engine on the rail. It was this want of sufficient adhesion which for many years delayed the introduction of railroads into common use, and led to a vast expenditure of time and money, and much ingenuity, in remedying this defect. With the exception of an ingenious contrivance, which gave to the engine legs, to enable it to push a train of cars, all the early plans for obtaining adhesion consisted of cog-wheels and rack-rails, in some form or other.

Some few years after the building of the Liverpool and Manchester railway, a centre rail, pressed by two horizontal wheels, driven by extra cylinders, was tried in England and found too complicated for use; and all these various contrivances have, with slight modifications, from time to time, been brought before the American public. In addition to these, many other plans have also here been resorted to to obtain the same end. The tender, by means of a lever, has been made to add a portion of its weight to that of the engine, when required; the steam of the boiler has been conveyed into perpendicular cylinders and made to exert its entire pressure on the driving-axles; and the ordinary driving-wheels of the engine have, on inclines, been substituded for very small wheels running on elevated rails, thus increasing the power of the engine by diminishing the diameter of the driving-wheels. Magnetism has also been invoked, to furnish the necessary adhesion, with many other suggestions which we have not time to enumerate. None of these, however, have answered the purpose, and the growing wants of the railway have only been supplied by heaping weight upon the engine, until it has become a huge steam-tug, with the sand-box, as an appendage, for sprinkling the rails—thus carrying within itself elements of destruction which no road, however well built, can long withstand; for, while the huge engine presses the road into the earth and laminates the rails, the sand which it sprinkles cuts away its journals and greatly adds to the wear of the road.

We have examined and reviewed all these various plans for the purpose of comparing them with the one now before us; and while they serve to strengthen our convictions that the railway system can never be perfected so long as weight limits the power of the engine, they confirm us in our belief that Mr. French's plan is the most simple, the most effective, and most readily adapted to the present system, which has yet been suggested.

The model which has been for some time working in the Capitol shows at a glance the whole arrangement. It consists of a common wooden superstructure, with a flat bar-rail: the ends of the cross-timbers are cut off flush with the sleepers, and the flat bar resting on the sleepers projects over on the outside of the track, forming a clear continuous space on each side of the road for friction rollers, or small wheels, to revolve up against the projecting edge of the rail. The cranks are attached to the ends of the driving-axle, and between these and the driving-wheels is suspended from the axle, on each side, a friction roller, or wheel, which is made to drop at pleasure directly under the driving-wheels. Using the driving-axle as a fulcrum, by means of a compound lever, these friction rollers or wheels are pressed up at pleasure, and to that extent press down the driving-wheels, producing instantly whatever amount of adhesion may be required.

The tread of the driving-wheels is as wide as the rails, and the friction rollers revolve just under them, with flanges to prevent their rubbing the sides of the road. These friction rollers or small wheels, when not required, are instantly thrown up some eighteen inches above the track, where they remain until they are again required, when they are instantly thrown into gear. This facility of removing them adapts the engine in all respects to the common road, and requires a modification of the rail only in working the inclines.

That a road on this plan may be as substantially constructed as on any other, your committee do not question, nor that the heavy rail may be readily adapted to it; thus giving to the road, however constructed, the use of machinery directly suited to its wants. Light engines, with light loads, at high velocity, while on the same road, might follow freight engines; and even these greatly reduced in weight, with large loads, at slower velocity; and the adhesion being at all times ready and certain, induces the belief on the part of your committee that roads with high grades can be worked in all conditions of the weather, with more certainty and regularity than are now the more level lines. The various modes which suggest themselves for elevating the rails, and fastening them down, as well as for taking advantage of this principle, will readily occur to mechanical minds, and your committee therefore deem it unnecessary to dwell upon them. They think it important, however, to call attention to the fact that the railway, now always seeking level lines, frequently passes at considerable and inconvenient distances from villages and towns, which are in a great measure cut off from their advantages, which could have been readily reached by grades of even one hundred feet to the mile; and when they reflect upon the immense sums which have been spent to reduce these grades, and on the great benefits which railways, notwithstanding all their expenditures, have conferred upon the public, they cannot but admit that any plan which multiplies these facilities at a greatly reduced cost, must be regarded as one of the most valuable contributions of the age. Nor can they forbear stating, that the form of road here proposed suggests the attainment of far greater security in railway travelling than can now be had, and admits of the application of new and most effective brakes.

The plan before us promises these wonderful results, and there is nothing in theory which disproves them. The early history of railroads shows that their introduction was for a long time delayed after engines had been constructed to move over roads, in seeking to give them greater adhesion to the rails than that due to their weight. The first engines built were remarkably light, and, using only one pair of driving-wheels, their adhesion was due only to that part of the weight of the engine which rested upon them; and this was not equal to their steam power, for it was shown by

experiment, that an engine with mechanical adhesion (cog-wheels in this instance,) could be made to draw five times as much load as by the adhesion due to its own weight: still, the adhesion due to its weight was sufficient to give the engine a progressive motion, and the advantage of smooth wheels and rails introduced a system in which the steam power of the engine was limited by its weight; and subsequent builders finding if the engine had more power than adhesion, it was not available, cut down its steam capacity to the latter standard.

Even at this time, it was no doubt apparent that the heavier the engine, the more it would draw; but it was then claimed for iron rails that they would last for half a century; and regarding heavy machinery as very detrimental to them, they forbid its use, and the Liverpool and Manchester railway was worked for many years with a standing order from the directory that no engine weighing more than six tons should be placed upon the road.

The adhesion due to these light engines fluctuated greatly on account of the weather, and gradually led to the introduction of heavier ones, with corresponding increase in the weight of the rail. From that time to the present no improvement has been made for increasing the adhesion of the engine, other than the mere connecting together several pairs of wheels for drivers, and thereby rendering available more of the weight of the engine than can be done by a single pair. To increase the adhesion of the engine, we must now increase its weight; and yet we cannot increase its adhesion, directly, in proportion to the weight added: if we could, the present system would not be as defective as it is. Experiment teaches that one pound of iron suspended from a pulley, will move on a plane six pounds of iron, resting on iron; hence it is said, the adhesion of iron upon iron is equal to one-sixth the insistent weight. If this be so, it requires six tons of weight to be added to the engine to give it one ton of adhesion—six pounds added for every one pound gained. But actual practice on railways shows that the adhesion is not worth so much, but is, under ordinary circumstances, probably nearer one-eighth or one-ninth of the insistent weight, and fluctuates greatly below this standard when affected by the weather; so that it will be seen, while the size of the boiler and its effective power may be increased directly in proportion to the weight added, the adhesion of the engine cannot be, but, for every eight or nine pounds added, can gain but a single pound; yet the adhesion limits the tractile power of the engine. It is, therefore, and has ever been, since the introduction of the present system, the object of engine builders to make these forces proportionate, for if the steam power be greater than the adhesion, the wheels will *revolve*, but not *progress;* if less, the engine remains stationary.

We have entered thus minutely into this branch of our inquiry, to show that heretofore there has been no inducement to combine

in the locomotive engine as much power as possible, with as little weight; but that, on the contrary, all the inducements held out have demanded more weight. From this view, your committee are convinced that the locomotive engine may be greatly reduced in weight without diminishing its steam capacity, and yet be made to retain sufficient strength for all practical purposes. In examining this subject of the practicability of ascending high grades on railroads, your committee have had their attention directed not only to the many various plans which have been suggested for effecting this object, but they have also examined the various reports of the performances of steam-carriages on common roads in England, reprinted in 1832 by order of the Congress of the United States. On the common roads the roughness of the earth's surface afforded sufficient adhesion; and the great object then to accomplish was, to adapt the engines to the undulations of the roads, and give them as much power as possible, and the necessary strength with as little weight as was practicable. In this report several very important facts are stated, or rather exhibited: First, that these steam-carriages, from weighing five and six tons on their first introduction, were improved upon until they were reduced in weight to two and a half and three tons, without lessening their effective power; secondly, that there was far less disproportion between the weight of the machinery and the available load than is now ordinarily exhibited on railways; and thirdly, that they hauled up steep inclines far greater loads, in proportion to their weight, than can now be done by the ordinary locomotive on a railway.

These facts but serve to strengthen the opinion, before expressed, that locomotive engines may be constructed much lighter than those now in use, with equal capacity to generate steam; and whenever it shall become the interest of builders to supply light engines, combining the greatest steam capacity with the necessary strength, American ingenuity will not be found wanting in capacity to construct them.

That, by mechanical adhesion, a properly-constructed locomotive engine may be made to draw far greater loads than it can do by the adhesion of its weight, is undeniable, as has often been shown in practice, and may at any time be proved by converting a locomotive into a stationary engine. Your committe, therefore, feel great confidence in the opinion, that if mechanical adhesion, as applied in the plan before us, be substituted for weight, engines may be made to draw remunerative loads over much higher grades than any now used, even such as are worked with assistant engines. These opinions are not in harmony with the current thoughts of the day; and simply because, having long been accustomed to seeing things done in a particular way, we come to regard that as the only way in which they can be done. We see a huge engine drawing a train, and another monster engine pushing it up a grade of eighty or one hundred feet to the mile; and

the labor appears so great, one is apt to think the working of grades cannot prove remunerative, when, in the instance referred to, the weight of the engines themselves may have constituted the greater part of the resistance.

If twenty years ago it had been proposed to work a grade of eighty feet to the mile with the common locomotive engine, it would have been thought entirely impracticable, as it was when it was claimed that engines could be made to run twenty miles an hour; so much so, that one writer, in derision of what he deemed to be so absurd a proposition, published his opposition to it, with the declaration that, as soon as incur the risk attending such velocity, were it possible to obtain it, "he would consent to be placed in a mortar and shot out of it head-foremost."

When we look abroad at the wonderful effects of steam, and the various offices in which it is employed, and reflect that it never tires, but performs the most arduous duty as readily as it does the lightest, laboring incessantly, and demanding only water and fuel—when we see it driving across the ocean the largest vessels which float, regardless of opposing winds and waves—we have been led to wonder why it should have ever been regarded as insufficient for hauling a train of cars up an inclination of a few hundred feet to the mile. The want of adhesion explains it; and the power of steam shows, when the supply of adhesion shall at all times become equal to the demand, then will grades be worked with as much ease as level lines.

Your committee feel also convinced that the plan for producing mechanical adhesion now proposed, will offer less resistance to an engine ascending a plane, than it would were the same quantity of adhesion produced by weight. This is illustrated in the model we have examined. This works generally a grade of about 1,100 feet to the mile, and the engine is made to ascend by means of adhesion produced by piling on the engine, just over its driving-wheels, a sufficient weight to produce the required quantity. This is then removed, and mechanical adhesion is produced, and with this the engine moves up the plane more rapidly and steadily than when loaded with the necessary weight. That this effect, exhibited in the model, will be realized in practice, your committee do not doubt. When the locomotive engine shall become limited in its power only by its steam capacity, it will be so much more powerful and effective than it now is, we may reasonably expect advantages almost as great to flow from this change in its character, as those which have hitherto accompanied its introduction.

In view of these things, and seeing nothing whatever in theory to disprove the utility or practical value of this invention, and confirmed in our belief by the working model, and by experiments heretofore made on quite a large scale, we recommend the appropriation by Congress of a sufficient sum to test fully, by practice, its actual value.

The inventor has spent much time and labor, and incurred great expenditure, in experiments and in perfecting his plan. He has demonstrated his success; yet the world is not prepared for the wonderful change he proposes: and the means he uses are so simple as rather to excite credulity, and awake opposition, than to favor its introduction. The history of inventions shows how great are the difficulties attending the introduction of anything new; and also that inventions the most valuable have, for years, often been delayed, and at last owed their success to some accidental circumstance. Nor can we in this connexion fail to remark that the first published conception of a railroad and locomotive engine, known to your committee, is due to Oliver Evans, a citizen of Philadelphia, who in vain attempted to awaken the public even to a consideration of the subject. The greater the interests an invention affects, the more difficult becomes its introduction; and it is notorious that almost all the valuable inventions of the world have been made by persons in no way connected with the subject they have so much improved. This also is made to operate against them.

Your committee, aware of the vast interests to be affected by this invention, and of the immense sums it may save the government in its contemplated railway expenditures, should it, in practice, realize the expectations of its friends, trust that an enlightened public opinion will sanction the appropriation of such a sum as shall be adequate for the purpose of fully and satisfactorily testing its practical utility, and of bringing it to the public notice.

From the American Railway Times.

MORRIS AND ESSEX RAILROAD.

Hackettstown, N. J., March 29th, 1853.

This improvement extends from New York City, by way of Newark, to Dover, in New Jersey, and is now under extension from the latter place to the Delaware Water Gap, where it will unite with the road running from the Gap to Stroudsburg and the west. Thus extending to the travelling community a line of, say one hundred miles less by this route to the Great Bend, than the Erie Railroad.

That portion of the extension between Dover and Hackettstown is now under contract, and the Chief Engineer is very sanguine of its completion by the 4th of July next. There is certainly no obstacle of a serious nature to prevent its consummation, and that period is looked to as a new era in the affairs of West Jersey. The route of this road may be called favorable, exceedingly so. The grades are slight, limited to fifty feet per mile, and when the resources of the county through which it passes, the large and increasing population, and the great demand for Railroad conveyance, is considered, this may with safety, and without fear of contradiction, be termed a safe and judicious investment. Immediately upon its completion to this place, it is the intention to put that portion to the Water Gap under contract, and push it forward as rapidly as possible. The distance from this point to the Gap is say, twenty-five miles, and with a little exertion, could be built in twelve or fifteen months. The bridging is a mere trifle, and but one tunnel of 250 feet in length.

JOURNAL OF INTERNAL IMPROVEMENTS.

North Missouri Railroad.

The County of St. Charles has set a noble example of public spirit—of an enterprising, enlightened and judicious character—to her sister counties interested in the North Missouri Railroad. She has subscribed $100,000 to the capital stock of the Company, and declared that it shall be paid by taxation. This act manifests a resolute earnestness and an equitable adjustment of the rights and duties of the citizens, making their liabilities and profits proportionate with their interests in this cause. And further, this act indicates great foresight, in as much as it places the credit of the subscription on a foundation as firm as the rocks on which her rising city is built, and secures a more rapid rise in the value of her property.

That the other counties of North Missouri, interested in this improvement, may, with the utmost unanimity, follow the example so wisely set by the County of St. Charles, we will here offer a few considerations to remove the *prima facia* prejudice—a natural though unjust prejudice—against taxation for stock, and to arouse a partiality—a prudent and honorable partiality—in favor of this sound and equitable means of raising funds to put this work into speedy operation, that it may bring immediate wealth and comfort to their homes.

A public good cannot be promoted without a public spirit, and it is too well acknowledged to need any illustration here that public spirit is mainly manifested by men of moderate means. The hard working mechanic and the busy merchant are made to bear an undue proportion of the burdens of public enterprises, while the high-living landlords and land-speculators sit like *incubi* on their victims.

True, there are a few glorious exceptions to this rule. There are land-princes who act nobly, who, without any compulsion of law, tax their energies and their possessions in full proportion with the public spirited man of moderate means. The Tax list of the County of St. Louis and the Stock Book of the Pacific Railroad prove both the rule and the exceptions. But besides the consideration of superior ability which should require the rich land-holder to do more for the cause of Railroads, than the mechanic or merchant of moderate means, the land-holder derives a manifold per-

cent. of profit from the road which the mechanic and merchant does not realize. The dividends of the road, it is true, are proportionately equal to all the stockholders; but the rents and fee titles of the land, are, by means of the road, raised 100 per cent. when the dividends of the road are only 10 per cent. Experience proves the facts to be far stronger than they are here stated. How much farther then does reason require that the landholder should advance before the mechanic and merchant in the promotion of Railroad enterprises? Moreover many and vast possessions of real estate in the West are held by non-resident speculators. Equity and good conscience declares, public justice requires that they should be compelled to do something in behalf of a cause, which promotes at the same time their own private interests and the public good.

How can the resident and non-resident landholders, whose private interests are above proved to be pre-eminently promoted by railroad improvements, be made to take their proportionate shares in this enterprise? The Legislature of Missouri have declared that it may be done by virtue of the common sense of the County expressed in an election. The unexpressed common sense of the people is felt to be that this law should be put in force for the benefit of the North Missouri Railroad. To facilitate the expression of this public opinion, it may be well to remove some impediments which make the mass stammer.

Ignorance of the amount of stock to be taken by each voter, of the value of the stock when taken, and of the benefit resulting from the road, is the main impediment to the free expression of public opinion on this subject.

That the people along the line of this road may be enlightened in this matter, let them take the case of St. Charles County.

The population of St. Charles County is, as per census of 1852, 12,492. The subscription for stock is $100,000, and therefore, of all the inhabitants, the average proportion of stock for each one is found to be $8.00, and the whole of this, need not be paid, it may be, for several years. When the first instalment is paid, at the end of the year a certificate of stock is given in exchange, which may be transferred like a Bank bill, and if sufficient stock be taken in the beginning to build the whole road, as may and should be done in conjunction with the State credit of $2,000,000 already granted, these stock certificates will serve as a valuable

currency in the trade of the country. The benefits resulting from the road will counterbalance its costs in manifold ways—by drawing population into the country; by drawing money; by raising the value of vegetables, poultry, milk—all kinds of produce at the home of the farmer, because these articles can be sent to market more easily; by lowering the price of goods, wares and merchandise at the home of the farmer, because these articles can be brought from the City more easily; by increasing the wealth of the mechanic and the merchant, because there will be more business for them to do, and they will be paid better and more promptly, because money will be more abundant, and the people richer; by lowering the tax rates, as there will be more people and wealth to pay them; and above all by raising the value of land, as there will be a greater demand for it, and more money can be made out of it.

The people of the other counties of North Missouri, interested in this enterprise, may see from the case of St. Charles County, and from the principles above advocated, how equitable, how easy, how safe, and what a brilliant speculation it will be for them to follow this example; and that, on an average of their inhabitants, they may surpass this example, it may be suggested they have greater need of the road as without it. St. Charles County is almost surrounded with avenues to market, while this avenue is almost the only hope for six of the ridge counties.

In order to concentrate as much light as possible at present on this subject, before the surveys are made, the route located, and stock taken, we will here present the most reliable opinion of the length and cost of this road from St. Louis to Iowa—being the opinion of those best acquainted with the topography of the country along the line indicated by the charter of the Company, combined with the opinion of those skilled in the science of Engineering.

The North Missouri Railroad is considered to be 250 miles in length. Its total cost is estimated at $4,500,000, being on an average $18,000 per mile.

How are these means to be obtained?

The State of Missouri has given its credit to the Company for the sum of $2,000,000, and thus a balance is left of $2,500,000 to be raised by subscription and otherwise.

On the 9th of May, 1853, the agents appointed to open books for the subscription of stock reported $650,800 subscribed.

Of this amount $100,000 are reported as having been subscribed in St. Charles County, and 516,000 as having been subscribed in St. Louis County, leaving $34,800 subscription of some of the other Counties on the line.

Such being the present condition of this enterprise, and nearly $2,000,000 being yet wanted to meet its estimated expense, what is the best mode of proceeding to obtain this sum?

Let the Counties along the line of the road be more fully advised, of the extraordinary benefits they will realize from this improvement, of the equitable, easy, safe and even inimitable method of taxation for stock, and let their enthusiasm and energy be aroused in the cause until, by a noble rivalry and heroic determination, the whole stock is subscribed.

Thirteen counties are deeply interested in this improvement. Their population and revenue, in 1852, was as follows:

Counties.	Population.	Revenue paid in 1852.
St. Louis	121,853	$88,754 79
St. Charles	12,492	3,368 66
Lincoln	10,461	3,017 98
Warren	5,776	1,741 59
Montgomery	6,064	2,090 21
Callaway	14,149	4,190 27
Audrain	3,845	1,232 68
Boone	14,565	6,070 98
Monroe	11,285	4,069 40
Randolph	9,917	3,449 81
Macon	7,517	2,000 00*
Adair	2,977	506 46
Schuyler	3,447	484 36
	224 348	$120,977 19

By comparing the population and revenue of St. Louis County with the amount of the population and revenue of the other counties, it is found to be as follows:

Counties.	Population.	Revenue paid in 1852.
St. Louis	121,853	$88,754 79
Other counties..	102,495	32,222 40

From which it appears that the population of St. Louis County is more than equal to the population of all the others, and that the revenue paid by St. Louis County, in 1852, is more than

* Probable amount.

double the revenue paid by all the others. But it does not follow that St. Louis County should pay one-half the expense of building the North Missouri Railroad,

1st. Because equal demands are made upon the people of St. Louis in behalf of the Iron Mountain R. R., the Ohio & Mississippi R. R., and the Pacific R. R., and

2d. Because St. Louis County contains only 350,000 acres of land, and the other counties above mentioned contain about 3,875,000 acres.

From all these facts, therefore, it appears that although on the basis of population and wealth, St. Louis County should take more than one half of the stock, yet in consideration of the equal demands made upon her for aid of three other Railroads, and in consideration of the additional fact that she has not one tenth as much land to be improved by the road as the other counties have, it seems that one-fifth of the stock necessary to build the road, which she has already subscribed, is her reasonable portion, together with the $2,000,000 State credit.

But it may be necessary for St. Louis County to double her subscription, to take $1,000,000 stock in this road—being two-fifths of the whole amount required, with the aid of the State credit, and then in consideration of the probable route of the road, and its probable proportionate benefit to the various Counties along the line, together with the comparative abilities of those counties, it seems equitable that the subscriptions along the line should approximate to the following order:

St. Louis County	$1,000,000
St. Charles	250,000
Lincoln	100,000
Warren	100,000
Montgomery	125,000
Callaway	100,000
Audrain	100,000
Boone	100,000
Monroe	125,000
Randolph	150,000
Macon	150,000
Adair	100,000
Schuyler	100,000
	$2,500,000

Taking the preceding table as a platform for operations, and deducting the subscription of $500,000 already made by St. Louis County on the Bond principle, it is found that an additional sub-

scription of $500,000 by St. Louis County on the Tax principle, will make on an average of all the inhabitants of the County ($4.-10) four dollars and ten cents stock for each one. And by dividing the balance of stock, $1,500,000 among the other counties, on an average of all their inhabitants, ($14.63) fourteen dollars and sixty-three cents, is all the stock that would fall to the lot of each one. And by the payment of ⅓ a year ($4.88), four dollars eighty-eight cents, is the only annual portion; and finally, by an energetic enterprise on the part of the people, in voting all the stock at once, on this sound, radical tax principle here indicated, all these little bits would, it is fair to conclude, be not only as good as Bank bills, but at a premium.

Should these suggestions meet with the approval of the above mentioned counties, an impetus would be given to the road which would not cease until Iowa became penetrated with it, and with the immediate importance of linking Missouri with Minnesota, where a charter has already been granted to the Louisiana and Minnesota Railroad Company, to form the final link in the chain of the great Mississippi Valley Railroad. The southern portion of this road is progressing with unsurpassed rapidity through Arkansas and Louisiana. Let the North Missouri people summon all their energies and their means, and direct them with unflinching perseverance in the prosecution of their portion of this work; let them petition Congress, to act on the memorials of the North Missouri and Mississippi Valley Railroad Conventions, that ten miles of land along the whole line may be granted to aid in the construction of this road; which land will enable the Company to meet the bonds of the State without a sacrifice of private interest; let the list of private subscriptions be swelled by the public spirited mechanics and merchants; let resident landholders advance their own proportion, and then vote for a tax, from which their advance will be deducted, and by which non-resident landholders and speculators will be radically compelled to take their proportionate shares in the enterprise; let the counties above tax themselves to the amount suggested; and let the County of St. Louis take 5,000 shares on the tax principle; and then Chicago, the Lake countries and the East will find a bold competitor for the prizes of the Northwest, business of every kind will be increased in St. Louis, the rise in real estate, by virtue of this movement, will far exceed the amount of stock in the road, the certificate of tax stock will be good as a Bank bill, and the value of the County Bonds, which are now at par, will be in demand at a premium, because capitalists will see that the success of this cause is as sure as if it were secured by the endorsement of "Manifest Destiny."

St. Charles, May 9, 1853.

HENRY COBB, Esq.

Dear Sir—The Board of Directors of the North Missouri Railroad Company met in this place to-day. Present, L. E. Powell, President, D. K. Pitman, Wm. J. McElhiney, B. A. Alderson, A. Krekel, A. King and R. B. Frayser, of St. Charles County; Jno. Harrison, of Callaway County; Thos. J. Marshall, of Warren County; Jas. S. Rollins, of Boone County; Jno. D. Coalter and Lewis Bissell, of St. Louis County; James H. Robinson, of Montgomery County.

A Quorum being present, the Board proceeded to the examination of the Reports of Agents appointed to open books for the subscription of stock.

The following is the result:

In Randolph County.....	100	shares,	$10,000
" Callaway "	32	"	3,200
" Montgomery "	130	"	13,000
"Audrain "	18	"	1,800
" Warren "	68	"	6,800
" St. Louis "	5160	"	516,000
" St. Charles "	1000	"	100,000
	6508	shares,	$650,800.

A sufficient amount having been subscribed to authorize an election, it was ordered that a meeting of the stockholders be held at the Court House in the City and County of St. Charles, on the second Saturday of June, next, for the purpose of electing thirteen Directors for said Company; the said election to be conducted under the supervision of Joseph H. Alexander, John Jay John, and Dennis McDonald.

It was further Resolved, that the books for subscription of stock be kept open for the purpose of obtaining further subscriptions, and that the commissioners make return of said books to the Secretary, on the second Saturday in June next.

No other business of importance was transacted, and the Board adjourned to meet in the City of St. Charles, on the second Saturday of June next.

Very respectfully, &c. BEN. EMMONS, JR.

St. Charles, Mo., May 11, 1853.

H. COBB, Esq.

Dear Sir:—Cant you stir up the *natives* in North Missouri so that the subscription can be increased sufficiently to get an issue of the State Bonds?

I have no doubt of the ultimate success of the enterprize.—But what we want is action now, and we want it here. If the Books

were open for foreign subscription, I have no doubt but the capital stock could be easily obtained abroad. But this should be a last step, to be resorted to only when all other means have failed.—The stock all ought to be taken along the line of the road, and the proper way in my humble judgment is to raise it by taxation. There are above this about eight or nine counties along the line of the route, besides several others near the line all deeply interested in this enterprize. A subscription by said counties proportionate to that of St. Charles with the additional subscription we way reasonably expect from St. Louis, would increase the stock to two millions. This with the State bonds to the same amount would nearly complete the road at least as far as its intersection with the Hannibal and St. Joseph Road.

I am confident that the plan of raising stock by taxation needs only to be understood to secure its adoption. The tax is not like a tax raised for the support of government for which no return is received except our privileges as citizens. In fact it is not a tax at all—it is only a loan of so much money to the Company, for the tax certificates will be convertible into stock or into cash with but little loss if any. We do not expect any depreciation of the certificates here. A large portion of the business men here will receive them in payment of debts and for services rendered, and in exchange for merchandize &c. at par.

Let the whole stock be taken along the route, and we will have such a road as its liberal minded projectors designed; it will be the people's road, in which they have a direct interest, and will be immediately under their view and control, bringing home its returns and profits to be expended here—not transporting them beyond the State to enrich foreign capitalists and speculators.

Very respectfully, your friend and ob't serv't, *

Iowa and North Missouri Railroad.

The people of Iowa are moving in conjunction with the people of Missouri, to weld the Iowa and Missouri links of the Mississippi Valley Railroad. Such movements will brighten the prospects of the North Missouri Railroad Co. The Valley of the Des Moines is represented as being remarkably beautiful and fertile, and increasing rapidly in wealth and population. The trade of the Des Moines Valley will be of immense importance to St. Louis, and the market of St. Louis will be of more than immense importance to the Des Moines Valley. The interests of the people of North Missouri will urge them to co-operate boldly with their Iowa neighbors, and the interests of the people of Iowa will not let them rest till this work is consummated.

In *The* (Keosauqua) *Democratic Union*, of May 14th, we find that a RAILROAD MEETING of the citizens of Appanoose and adjoining counties was held in the Court House in Centreville on the 4th of May, 1853. Harvey Dunlavy, Esq., Chairman, Hon. R. Riggs and John Potts, Esq., Secretaries. Messrs. McAchran, S. Millington, W. W. Cottle, H. Tannehill, and D. P. Sharps, Committee on Resolutions, reported, among others, the following, which were unanimously adopted:

Whereas, The State of Missouri has taken steps to build a Railroad, known as the North Missouri Railroad, from the City of St. Louis via St. Charles on the divide between the waters of the Mississippi and Missouri rivers, to terminate on the northern line of said State, in the county of Schuyler, in the direction of Fort Des Moines, therefore be it

Resolved, That in the opinion of this meeting early, determined and energetic action on the part of the people of this county should be had to secure the location of said road, through this county, via Centreville.

Resolved, That in the opinion of this meeting the county of Appanoose ought in her corporate capacity to subscribe $50,000 for the construction of said road.

Resolved, that the County Court be requested to make an order to open a poll at each election precinct at the August election, to vote for and against the stock named in the foregoing resolution, provided said road be located as provided in the first resolution.

Resolved, That the counties on said route between this and Fort Des Moines, be respectfully requested to lend a helping hand to secure the early location and construction of said road.

Resolved, That the citizens of Southern Iowa be requested to meet at Chariton, in the county of Lucas, on the first day of the June term of the District Court, to consider the best means of speedily constructing the North Missouri Railroad.

Resolved, That R. Riggs, H. Tannehill, J. M. Rynix, Geo. W. Sweringen, Dr. W. W. Cottle, David Bayley, N. Udell, Jas. Ewing, A. J. Stevens, James Monroe, Joseph Dudley, J. G. Manson, M. Summers, and A. Harris be appointed delegates to attend said convention at Chariton.

We may expect to hear of a judicious and liberal plan adopted at the CHARITON CONVENTION, which will fix the destiny of the Mississippi Valley Railroad through Iowa, and open the heart of that State to the treasures of the South, which wants and is ready to pay the fairest price for their produce. May they be impressed to act energetically and in harmony with the Law of Trade.

Arkansas and Missouri Railroad.

We noted the fact last month that the "*Cairo and Fulton R. R. Co.*" was organized at Little Rock, on the 13th of April, and the election of ROSWELL BEEBE, President, WILLIAM B. WAIT Treasurer, JOHN M. ROSS Secretary.

We will here add the list of the Board of Directors which is composed, as we are well informed, of prudent and energetic men who are in earnest about their business.

1. Hon. Daniel Ringo, Judge U. S. District Court, Little Rock.
2. Hon. Edward Cross, Marlbrook, Hempstead Co.
3. Hon. H. P. Poindexter, Washington, Hempstead Co.
4. James M. Curran, Att'y at Law, Little Rock.
5. William B. Wait, Merchant, " "
6. A. J. Hutt, " " "
7. Wm. C. Bevens, Att'y at Law, Batesville.
8. Edwin R. McGain, Planter, near Jacksonport.
9. Gen. Wm. R. Cain, Att'y at Law, Pocahontas.
10. John M. Mitchell, Farmer, Gainsville.
11. Thos. J. Blackmore, Att'y at Law, Osceola.
12. Israel M. Moore, Farmer, Searcy.
13. Roswell Beebe, Little Rock.

MR. BEEBE'S wide spread reputation for energy, perseverance and prudent management of business will materially enhance the credit of the Company. The Company have displayed great wisdom in electing him President, and investing him and an executive committee with ample powers to make bold movements and a rapid progress in the enterprize,—not only to obtain subscription of stock, but also donations of right of way and of land, and furthermore "to secure the services of a competent corps of engineers to survey the route of the road," &c.

The 9th sec. of the charter declares that "the said corporation may commence the construction of said road at any time after $100,000 of capital stock shall have been subscribed, and five per cent. thereon paid to the Board of Directors."

And as subscription books for stock in this Company were speedily opened at various places through the State along the line of the route from Missouri to Louisiana, enthusiastic meetings held and resolutions made to concentrate the mind and money of the

people on this great work, and as the Legislature of Arkansas has authorized and empowered this Company to survey &c. the road specified in the Grant of Congress, and as the Grant of Congress "*provided further*, that the lands granted shall be applied in the construction of said road, and shall be disposed of only as the work progresses, and shall be applied to no other purpose whatsoever," and as moreover these lands cannot be transfered by the State to any other company without infringing the vested rights of this one, we may conclude, that the stock necessary to begin the construction will be promptly taken, the final survey made, the route located, the lands selected, the legislature convened, the grant transferred and the road built—as the preliminary work is now being carried on—with rapid progress.

Last month we contrasted the productions of Arkansas and Missouri, and suggested the immense reciprocal advantages to each of these States by opening an avenue of easy trade between them.

This month we have received extraordinary confirmations of its advantage to Missouri. The Report of Prof. John A. Warder, on the subject of Arkansas Slate, is one of them (see ante page 84). The following letter from one of the Board of Directors of the C. & F. R. R. Co. is another eloquent testimonial of the wisdom of this policy.

Marlbrook, Hempstead Co., Arkansas,
April 24th, 1853.

Gentlemen—

I have just received the *Western Journal & Civilian* for the preceding year, together with your obliging note of the 15th inst. Both were peculiarly acceptable at this junction as an organization had just been accomplished under the Cairo & Fulton R. R. charter, and books opened to receive subscriptions for stock. I beg you to accept my sincere acknowledgments for the excellent article in the *Journal & Civilian*, under the head of "Arkansas and Missouri Railroad." It will, in my judgment, be worth thousands to the company by inducing subscriptions for stock in the Road. With our citizens the enterprize is gaining ground daily, and our friends abroad may rely upon that the Arkansas portion of the Mississippi Valley Road will be built. In the southern, or rather Red river portion of the State, its success involves a question of vitality, as without it, the country will have to be abandoned. With a rich soil and climate adapted to the culture of almost every production of the earth, we are without the means of access to market except at short intervals, and exceedingly oppressive rates. From three to eight dollars per bale, with three per cent. insurance, is

not unusual for the transportation of our cotton to New Orleans, and in the immediate section of country refered to, forty thousand bales are produced annually. Thus situated, I need not assure you of our zealous co-operation in everything calculated to insure success, or of grateful feelings toward those who may in anywise be instrumental in conducing to an end so vitally important.

You will I hope, continue to forward me your valuable Journal and consider me henceforth a subscriber, with the assurance that I shall encourage its circulation to the utmost extent in my power.

Very truly & respectf'y, yours, &c. EDW. CROSS.

MESSRS. TARVER & COBB, St. Louis.

These 40,000 bales of cotton from the southwestern corner of Arkansas, can be transported to St. Louis by the Arkansas and Missouri Railroad cheaper than to New Orleans by the river. At St. Louis we would have the cotton of Arkansas, as well as we have now the sugar of Louisiana, manufactured; and from St. Louis, we would have them distributed to consumers throughout the Mississippi Valley. The people of Arkansas would make money by the operation, both ways; and the people of this valley would save the cost of freights and various charges attending these articles to and from foreign depots.

We cannot close this article without expressing our unfeigned admiration at the devotion and energy manifested by ROSWELL BEEBE, the President of the Company, in defending and advancing this cause, and at the caution and sagacity of ELIAS N. CONWAY, Governor of Arkansas, in accepting and guarding the Grant of Congress, and securing all lands along the routes of railroads to the State.

FINANCIAL STATISTICS OF ST. LOUIS.—Comptroller's Report.

Bonded Debts. From the "Mo. Republican."

					Annual Interest.
Bonded debt of the City, April 12, 1852—commencement of the fiscal year 1852				$1,736,096	$107,663 76
Bonds paid during the fiscal year 1852—			Interest.		
April 18, 1852, 1 Bond	1,000 00	6 per cent.	$60 00		
June 1, do. 50 do.	50,000 00	7 per cent.	3,500 00		
December 1, do. 29 do.	29,000 00	7 Per cent.	2,030 00		
April 3, 1853, 20 do. $500 each, $10,000 / do. 19 do. 1,000 do. 29,000	39,000 00	10 per cent.	3,900 00		
Deduct	$119,000 00		$9,490 00	119,000	9,490 00
				$1,617,096	$98,163 76
Bonds issued during the fiscal year 1852—					
100 for Harbor Improvements.					
Less 14 Cancelled by Mayor Kennett, April 8, 1853,					
86			$86 000		
90 for extension of new Water Works			90 000		
40 for improvements of Old Limits			40 000		
20 for improvement of Wharf			20 000		
70 for general Sewers			70 000		
38 for district Sewers			38 000		
26 for City Stores in Block 7, &c.			26 000		
54 to pay Bonds in Philadelphia			54 000		
50 to pay balances or deficits			50 000		
150 for stock in Pacific Railroad Company	$150 000				
100 do. in Ohio and Mississippi Railroad Company	00 000—250 000				
Add 724 Bonds, all at 6 per cent. interest				$724,000	$43,440 00
Total Bonded debt, April 9, 1853, as detailed in table				$2,341,096 Int.	$141,603 76
Increase, deducting $19,000 paid				$605,000	

Of the above—

$34,700 are 10 per cent. Bonds	$3,470 00	
2,281,396 are 6 per cent. do.	136,883 76	
25,000 are 5 per cent. do.	1,250 00	
$2,341,096	$141,603 76	

The foregoing issue of Bonds, together with 40 on hand from the previous fiscal year, were disposed of as follows, viz:

1852.					
April 13,	35	Bonds at 93			32,550 00
do. do.,	24	do. do. 93	22,320	47,020 00	
do. do.,	26	do. do. 95	24,700		
do. 22,	20	do. do. 93			18,600 00
May 1,	20	do. do. 93½	18,700	37,600 00	
do. 14,	20	do. do. 94½	18,900		
do. 18,	5	do. do. 95			4,750 00
do. 20,	54	do. do. 94¾			51,165 00
June 5,	26	do. do. 95¼			24,765 00
August7,	10	do. do. 96			9,600 00
Sept. 10,	8	do. do. 96			7,680 00
do. 18,	20	do. do. 96½			19,300 00
do. 20,	20	do. do. 96 13–16	19,362 50		
do. 22,	3	do. do. 96⅞	2,906 25	29,063 12	
do. 23,	7	do. do. 97 1–16	6,794 37		
1853.					
Jan. 17,	6	do. do. par	6,000	46,080 00	
do. 31,	40	do. do. par and int.	40,080		
Feb. 15,	30	do. do. par int. 4 m's 25 days			30,725 00
do. 17,	20	do. do. par			20,000 00
do. 21,	50	do. do. do.			50,000 00
do. 22,	30	do. do. do.			30,000 00
do. 23,	20	do. do. do.			20,000 00
do. 24,	20	do. do. do.			20,000 00
	514				498,898 12

and 255 paid to the Railroad Companies at par.

AMOUNT OF BONDED DEBT FALLING DUE EACH YEAR.

1853,	4,800	1867,	70,000
1854,	5,200	1868,	100,000
1855,	43,700	1870,	200,000
1856,	38,400	1871,	407,000
1857,	28,000	1872,	428,000
1858,	53,200	1873,	210,000
1859,	34,896	1874,	54,000
1860,	22,200	1876,	70,000
1861,	200	1877,	66,000
1862,	90,000	1878,	46,000
1863,	4,000	1879,	50,000
1864,	75,000	1890,	25,000
1865,	95,500	1895,	50,000
1866,	70,000		

The bonds due the present fiscal year, 1853, are:

May 3, 1 funded debt bond	$1,000 00			
June 26, 1 " "	1,000 00			
Aug. 11, 1 " "	600 00			
Aug. 19, 1 " "	1,000 00			
	$3,600 00	10 per c	N. Y.	
May 22, 1 Headley & Turnbull bond	200 00	10 per c.	St. L.	
June 12, 1 Harbor bond	1,000 00	6 per c.	N. Y.	
Amount.....	$4,800 00			

From this exhibit, it will be perceived that the amount of bonded debt to be provided for each year, until 1862, is but small; for this, and the next, comparatively nothing; and with due economy on the part of each successive administration, can easily and should be paid, by the surplus revenue of each year, without resorting to the re-issue of bonds for that purpose.

The payment of the fifty bonds June 1, 1852, was made from funds specially provided therefor by ordinance 2,812. Those paid Dec. 1, $29,000, and April 3, 1853, $39,000, together $68,000, were made from the treasury by authority of ordinance 2,400, requiring the Comptroller to sustain the credit of the city by providing for the payment of the public debt and interest as the same becomes due.

For this purpose I submitted to the former City Council a bill appropriating that amount to bills payable, and authorizing the issue and sale of so many bonds as would be necessary to supply the deficiency, after applying the surplus revenue of the year to that purpose, as provided for in the charter. This bill, for want of time, I presume, was not passed by the Council before their final adjournment, and was left over with the unfinished business of the last session. The surplus fund of the year—that is to say, the excess of revenue proper over the appropriations for general purposes of the year, being, as appears from the table, a little exceeding $40,000, that amount may be applied to the payment of the bonds, which will leave to be supplied by the issue of new bonds therefor the sum of say $28,000.

Since the commencement of the present fiscal year, the following bonds have been issued, and are to be added to the table of bonded debt, viz:

April 30, 1853, 100 bonds issued and paid to Pacific Railroad Company..... .....$100,000
May 7, 30 bonds for new Water Works..... 30,000

These last were sold for cash at 100 1-10, and proceeds paid into the treasury.

Comparative Statement of the Receipts into the Treasury during the years 1851 and 1852.

		1851.		1852.	Increase.	Decrease.
Licenses		$25,755 00		$31,175 00	$5,420	$
Cemetery		402 45		226 35		176 10
Vehicles		9.156 00		9,517 00	361 00	
Redemption of property		3,297 66		6,258 46	2,960 80	
Surveying fees		238 00				238 00
Water Works		30,824 85		36,995 38	6,170 53	
City Commons		1,610 32		3,449 97	1,839 65	
Ground Rent		441 00		441 00		
Rent, store block 7				1,500 00	1,500 00	
Market stalls and stands		13,940 08		12,430 68		1,508 40
Fines and Fees		4,307 86		4,035 53		282 33
Hay and Coal, Market Street	1,608 85		1568 10			
do. North Market	1,942 20	3,478 05	1564 00	3,132 10		345 95
do. Front Street	27 00					
Gas Light Dividend		1,700 00		1,800 00	100 00	
Contingent		344 52		926 00	581 48	
Merchants' Taxes		38,659 91		40,767 82	2,107 91	
General Taxes		322.521 19		361.421 02	38,899 83	
Harbor Taxes		31,720 77		17,670 42		14,050 35
Wharf, Harbor Master	44,400 60		52814 33			
do. Lumber do	874 64	47,064 35	828 82	55,506 69	8,442 34	
do. Wood do	1,789 11		1866 54			
Special Taxes		6.652 62		6,400 91		251 71
Sales of property, Ord. 2,531		6,733 13				6,733 13
Hospital Fees		686 75				686 75
Ohio and Mississippi Railroad Company, to pay interest				9,000 00	9,000 00	
Chesnut Street Sewer		9,357 64		5.658 63		3,699 61
Olive " "		550 00		7,256 85	6,706 85	
		$559,452 15		$615,570 21	$84,090 39	$27,972 33
Sales of Bonds		294,660 73		498,898 12	27,972 33	
Receipts in Treasury		$854,112 88		$1,114,468 33	$56,118 06	

The receipts into the Treasury for the fiscal year 1852, exclusive of the sales of Bonds, exceeded those of 1851 $56,118 06. The principal increase of revenue being in the items of licences, water works, wharf, &c., but mainly from general taxes, notwithstanding a harbor tax of but 1-29 instead of 1-10 of one per cent was levied, and but little derived as yet from the city stores, in block 7.

		For 1851.		For 1852.	
The total receipts into the Treasury, exclusive of loans, was		$559,452 15		$615,570 21	
Deduct therefrom special objects, viz:					
For New Limits, one half its revenue	$70,668 50		$79,518 10		
For Wharf Fund	47,064 35		55,506 69		
For Harbor Tax	31,720 77		17,670 42		
For Special Tax Fund	6,652 62		6,400 91		
For School Fund, 1-10 commons revenue	161 03		344 99		
For Chesnut street sewer fund	9,357 64		5,658 03		
For Olive street sewer fund	550 00		7,256 85		
For interest from Ohio and Mississippi Company			9,000 00		
		166,174 92		181,355 99	
The revenue proper was, for 1851		$393,277 24	For 1852	$434,214 22	Surplus $40,936 98

The net revenue of the fiscal year 1851, after deducting special objects, and appropriated as per Charter, Act 3, Sec. 1, and Act. 7, Sec. 21, to expenditures of 1852, was $393,277 24

That of the fiscal year, 1852, to be appropriated to expenditures of the present is 434,214 22

The surplus is 40,936 98

LITERARY DEPARTMENT.

Valley of the Ohio.

ITS CONQUEST AND SETTLEMENT BY AMERICANS.

BY MANN BUTLER, ESQ.,
Author of the "History of the Commonwealth of Kentucky."

The title of the Iroquois to the western country, whether north or south of the Ohio river, which was much dwelt on by the British government, and even by Doctor Franklin, with the colonial writers generally,* seems to be doubtful, at the times familiar to our countrymen, whatever it may have been in more ancient times. Upon any claim of recent dominion or conquest on the part of the Iroquois over the region in question, the title of these tribes may well be pronounced devoid of all force, against the rights of the numerous and war-like tribes of the Northwest and South. These tribes never, within historical knowledge, admitted any claims of the Six Nations to the Valley of the Ohio. They confederated with the Senecas of those nations in the common war against the British, and subsequently against our own countrymen, upon a footing of thorough unquestioned equality, they occupied the northern side of the valley of the Ohio, and they hunted or marched in war parties through the centry on its southern side, without a question of right, or any controversy beyond the local feuds of border barbarians with one another. If the Six Nations had exercised the supremacy over the northwestern tribes, which they sternly did over the Delawares of Pennsylvania, in favor of that province, to enforce the "walking purchase," as it was called,† there would have been evidence of it, in the long transactions which for nearly three quarters of a century took place between them and the English together with our own countrymen.

In consequence of the instructions from the British ministry to Governor Dinwiddie of Virginia, previously mentioned, two companies, of a hundred men each, were raised by the province, and placed under the command of Washington as Major; they had orders to finish, in the best manner they possibly could, the fort, which was expected to have "been already begun by the Ohio company, on the present site of Pittsburg. A Captain Trent had command of one of the Virginia companies; and he dispatched Ensign Ward with forty one men, to execute the order of the British government, and of Virginia.

This movement on the part of the colony immediately produced an attack upon the unfinished fort, and a summons to surrender from M. Contrecoeur, in the French service, at the head of "up-

* Franklin's Writings, vol. 4. Ohio Settlement.

† History of Conspiracy of Pontiac, p. 77.

wards of one thousand men, who came from Venango,* with eighteen pieces of cannon, sixty barteaux and three hundred canoes."†

To this overwhelming force submission seemed inevitable, and the officer, after capitulating, "marched up the Monongahela, to the mouth of Redstone creek."

This hostile step made by subordinates, in the remote frontiers of two European States, then by treaty at profound peace, was succeeded by vigorous preparations, on the part of Virginia, for hostilities. It was too much like the rash steps taken by a late President of the United States in our difficulties with Mexico, which might possibly have been acquitted, without the dread alternative of war. Very different was the policy of President Jefferson, in our controversy with Spain about the boundaries of Louisiana, in 1806. Then the military commanders of both countries could agree upon a neutral line, afterward sanctioned by their respective governments, by which war with Spain was avoided. Indeed notwithstanding our numerous tedious and exciting controversies with that power, the United States have succeeded in avoiding open hostilities from the birth of our Republic to the present time. Long may such pacific relations continue under mutually forbearing counsels, on the part of both countries; and if Louisiana and Florida did not provoke a war between them; it is to be hoped by the friends of liberty and peace, that Cuba will not be permitted to involve us in the dread calamities of war. They can never be too highly estimated in the scales of social justice and humanity; unless in the alternative of slavery and dishonor, or war with all its perils.

A regiment was now raised, and confided to the command of Joshua Fry, as Colonel, and George Washington as Lieuten. Col. At the head of this regiment, (for Colonel Fry had not taken the field) Washington marched into the neighborhood of the Monongahela. It was here nearly north of the subsequent site of Fort Necessity, that a French party of observation, under the command of M. Jumenville was surprised by a detachment from the Virginia regiment, and the French commander *killed in open battle;* not assassinated, as strangely represented by the French officers, and still more so, by French historians.‡

This slight affair of posts would be every way unworthy of notice, were it not for the erroneous representations of French historians, and the exalted reputation to which, by the appeal of civilized world, the American commander subsequently arose. These unfavorable and unjust criticisms have been comparatively unknown to our countrymen, reposing in their own enthusiastic admiration for their great patriot chief. They thought, the world

* Mouth of French Creek, the old Riviere aux Boeuf, or Beef River, as it is translated upon the map attached to the account of Bouquet's Expedition.

† Sparks II, 7, 447.

‡ Sparks, vol. II, 7, 447.

had entirely agreed with them in this sentiment, as they knew they did to an extent which confers imperishable honor on his name. These depreciating remarks have been fully discussed by the accomplished and devoted editor of the Washington Writings, and the falsity of this obsolete calumny established forever.*

Shortly after this encounter of the 28th of May, 1754, Washington was informed by his Indian scouts of the advance of a French party of greatly superior numbers; a retreat was therefore made to the Great Meadows.†

At this point the fatigue of his men from dragging the swivels over the mountainous roads, and the exhaustion of much of their provisions (for they had been without bread for eight days), compelled Washington to halt and to fortify. A small fort was erected out of the adjacent timber, with the readiness and expertness with the axe, characteristic of the American backwoodsmen. It was well denominated Fort Necessity ("from the circumstance of its erection and original use.") In this hasty fort or stockade, Washington was soon surrounded by a superior body of French, under the command of M. Contrecoeur, and after a defence of nine hours, surrendered with the honors of war. The French flag now waved over the western country, from Detroit to Fort Chartres. Yet the Indian proprietors of this vast region were treated with indifference or contempt flagrantly unjust to their rights.

The two great belligerents rapidly prepared to carry on a war in these remote western wilds yet undeclared to the world.

In June, 1755, General Braddock, at the head of an army of more than 2,000 effective men, of whom about 1,000 belonged to the king, and the remainder furnished by the colonies:‡ a force unexampled in the forests of America, marched from Fort Cumberland (now the town of Cumberland in Maryland), for the capture of the French fort Duquesne, and the recovery what was deemed British territory. So harassing were the obstacles to the march through the unbroken and mountainous wilderness, that on the 8th of July, 1755, a body of twelve hundred men, with light baggage, proceeded on as advance; leaving Col. Dunbar to bring forward the rear division. This overwhelming force proceeded uninterrupted on their march, and in most imposing order. The difficulties of transportation and delay were almost invincible to the British troops, so little used at that day to the embarassments of a new country, and to a theatre of action, at once both mountains and wilderness. It took the army nearly five months to get from Alexandria, on the Potomac, to within ten miles of Fort Duquesne; the troops landed on the 20th of February; but they did not begin their march till the 20th of April, 1755.

* Sparks, vol. II. 7, 417.

† West of the Youghiogany, near a fort at Laurel Hill, and a spot known as Braddock's Grove.

‡ Sparks, II, 469.

On approaching the Monongahela river, the army was compelled by the abrupt nature of the ground, to cross a little below the junction of the Youghiogany, to the southern bank of the former stream. This was early in the morning of the 9th of July, 1755; all things were at length in readiness, and the troops "all in full uniform, the soldiers arranged in columns, and marched in exact order, the sun gleamed on their burnished arms, the river flowed tranquilly on the left. Officers and men were equally inspired with cheering hopes and confident anticipations." Well might Washington say, as he afterward did, in addition to these remarks, that the most beautiful spectacle he had ever beheld, was the British troops on that eventful morning. About noon the army crossed again to the northern bank of the river, and came upon a level plain elevated but a few feet above the surface of the river, and extending northward about half a mile from its margin—there commenced a gradual ascent, at an angle of about three degrees, which terminated in hills of a considerable height, at no great distance beyond. The road to Fort Duquesne led over this plain and up this ascent. By the order of march a body of three hundred men, under Col. Gage, composed the advanced party, which was followed by another of two hundred; next came the General with the columns of artillery, the main body of the army, and the baggage. In the meantime, while the British army are left crossing the Monongahela in this beautiful order, it becomes necessary to notice the movements of the French, to resist so overwhelming a force.*

From his unequalled scouts both French and Indian, M. Contrecoeur, the French commandant of Fort Duquesne, received constant intelligence of the British force, and its daily marches. By these Braddock's army was represented as amounting to three thousand men. From a force so superior, the French commandant was preparing to retreat. "when M. de Beaujeu, a captain in the French service, proposed to head a detachment of French and Indians, and meet the enemy in their march."† The Indians were then applied to for their co-operation; they refused, on account of the superiority of the enemy. But at the earnest solicitation of Beaujeu, they agreed to assemble in council upon the proposition; the Indians again refused. This disappointment only excited anew the ardent spirit of this true son of France, and he addressed them in these words: "I am determined to go out and meet the enemy. What! Will you suffer your father to go out alone? I am sure we

* This information, thanks to the ardent labors of the editor of the Washington Writings, has been first laid before the American public, as obtained from the archives of the War Department, or Bureau de Guerre, at Paris. In this repository of the military deeds of France, the above indefatigable writer found three brief accounts, one of which appeared to be written on the spot from which the above narrative is condensed. Spark's Wash., vol. II, App.

† Idem, II.

shall conquer." This ardor of the French officer overcame the wily caution of the natives of the forests; on this third expostulation they agreed to accompany him.

The 7th and 8th of the month were passed in making preparations for the attack, and reconnoitering the ground over which the enemy, now within sixteen miles of the fort, must pass. Two other captains, Dumas and Liguery, with some inferiors, now joined Beaujeu, at the head of about six hundred Indians. This is the medium, at least, of the different French accounts, so different from the conjectures of the English, and even of the sagacious Washington and Franklin. The former stated,* that there were no more than three hundred, and the latter, at most, not exceeding four hundred. The average force under M. Beaujeu amounted to about eight hundred and fifty or eight hundred and sixty-seven: while their opponents, in the advanced division, were about twelve hundred.

But there was a much more fearful difference between the two armies than numbers; it was skill in the commanders; the one fettered the spirit by which he was surrounded, the other allowed it full play; the one adapted his movements to the ground and the country in which he actually was, the other governed himself by tactics suited to quite different scenes,—to the low countries of Europe, where Braddock had principally seen service.†

To understand this disastrous action, it is essential to know the nature of the ground. This is most perspicuously described‡ as a hill, which commencing about half a mile from the river, descended in the gentlest manner; along each side of this inclined plain, a ravine extended, eight or ten feet deep, (even in 1830) and then covered with long grass and timber. Here, between these two places of natural ambuscade, capable of concealing at least ten thousand men, the British troops advanced with the most unsuspecting or presumptuous confidence. In vain the experienced Croghan,‖ who had for many years been the deputy Indian agent for the Six Nations, attended with a body of friendly natives; they were treated with so much neglect, that they all deserted, one after another. Washington, who was much consulted by the General, but whose advice was not regarded, importuned him in vain, to employ these Indians as scouts along the route of the army. Orders from superiors were equally lost upon this misguided officer, as advice from inferiors. The Duke of Cumberland, distinguished in history as once intended for the monarch of the British colo-

* Sparks, II, 87. Bancroft, IV, 187.

† Smalfelt X, 127, 128. Sparks II, 67.

‡ Sparks II, App.

‖ Col. GEORGE CROGHAN, the experienced Indian agent of the British government, and Deputy under Sir William Johnson; not Colonel WILLIAM CROGHAN, of Kentucky, and the father of the gallant defender of Fort Stephenson, in more recent times.

nies,* had, in his instructions to General Braddock†, carefully cautioned him "to beware of an ambush or surprise." In this situation of the ground, the British were crossing the river just below where the French and Indians posted themselves, and were waiting till Braddock's advanced guard came up the ascent. It had been the intention to meet the British at the ford of the river; and then after *annoying* them as much as possible, to retreat to the ravines, on the sides of the road, a spot which had been selected the previous evening.‡ This had been prevented by delay; and the French plan was now limited to a surprise from their ambuscade. The attack by the allied troops was commenced upon the British advance as it reached the rising grounds passing between two ravines occupied by the French and Indians. "It was repelled by so heavy a fire, that the Indians thought it proceeded from artillery, and they began to waver. At this moment, M. Beaujeu was killed, and the command devolving on M. Dumas, he showed great presence of mind in rallying the Indians. He ordered his officers to lead them to the wings, and attack the enemy in flank, while he, with the French troops, would maintain the position in front." These orders were well seconded; and though the battle raged with great fierceness for a time, the random direction of the British fire against the unerring aim of an enemy, only discernable "by the smoke of their guns," made little impression. The Indians fired from the edge of the ravines, where the greatest part of them fought, and their horrid yells, with which the woods resounded, struck terror into the hearts of the British soldiers. The general moved "speedily to the relief of the advance, but before he could reach the spot, which they occupied, they gave way, and fell back upon the artillery, and the other columns of the army causing extreme confusion, and striking the whole mass with such a panic, that no order could be restored. The general and the officers behaved with the utmost courage, and used every effort to rally the men, and bring them to order; in vain. In this state, they continued nearly three hours, huddling together, in confused bodies, shooting down their own officers and men, and doing no perceptible harm to the enemy. The Virginia provincials were the only troops that seemed to retain their senses; and they fought with a bravery and resolution, worthy of a better fate. They adopted the Indian mode, and fought, each man for himself, behind a tree. This was prohibited by the general, who endeavored to form his men into platoons and columns, as if they had been manoeuvering on the plains of Flanders. Meantime the French and Indians, concealed in the ravines, and behind trees, kept up a deadly and unerring discharge of musketry, singling out their objects, taking

* Bancroft, IV, 232.
† Smollett, X, 128.
‡ Bancroft, IV, 188.

deliberate aim, and producing a carnage unparalleled in the annals of modern warfare. More than half the army that had moved in so proud an array, only three hours before, were either killed or wounded." "The general had five horses shot under him, and at last received a wound through his right arm into his lungs, of which he died on the 13th of July." The same officer represents* the men as "so extremely deef to the exhortation of the general and the officers that they fired away, in the most irregular manner, all their ammunition, and then ran off, leaving to the enemy the artillery, ammunition and baggage; nor could they be persuaded to stop till they got as far as Gist's plantation; and there only in part, many of them proceeding as far as Colonel Dunbar's party, which lay six miles on this side (*i. e.* farther east). The officers were actually sacrificed by their good behavior, advancing sometimes in bodies, sometimes separately; hoping by such an example to encourage the soldiers." Col. Washington had two horses shot under him, and his clothes shot through in several places, behaving the whole time with the greatest courage and resolution.‡ "I expected every moment to see him fall," says Dr. Craik, his faithful surgeon unto death. Nothing but the superintending care of Providence could have saved him.‖ "Some potent Manitou," exclaimed an Indian chief, who had singled him out with his rifle, and bade his warriors to do the same, "protects his life."§ "Death," wrote Washington,¶ "was levelling my companions on every side of me; but by the all-powerful dispensations of Providence, I have been protected."

The loss in this battle was tremendous: "ten captains were killed, and five wounded; the whole number of officers in the engagement was eighty-six, of whom twenty-six were killed, and thirty-seven wounded. The killed and wounded of the privates, amounted to seven hundred and fourteen, of these, at least, one-half were killed." "The Virginia troops showed," says Colonel Washington, "a good deal of bravery, and were nearly all killed; for I believe, out of three companies that were there, scarcely thirty men are alive. Captain Peyronny, and all his officers down to a corporal, were killed. Captain Polson had nearly as hard a fate, for only one of his was left."° While this destructive slaughter was committed on the British troops by themselves and their enemies, the loss of the French, from an imperfect return, was stated at three officers killed, and four wounded; about thirty soldiers and Indians killed, and as many wounded.

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* Sparks, II, 471, Letter of Col. Orme, an aid of Braddock, to the Governor of Pennsylvania.

‡ Sparks, II, 87.

‖ Marshal's Washington, vol. 1.

§ An Indian chief confirmed this account on meeting Washington upon his visit to the West in 1772.

¶ Sparks, II, App.

° Sparks, II, 87.

The routed troops hastened over the river, and did not intermit their flight, till they reached Dunbar's camp, seven miles from the Great Meadows, and about fifty miles from Fort Cumberland, at Will's creek. At this camp the artillery was destroyed, and the public stores and heavy baggage were burnt, by whose orders was never known," says one officer,* while another represents, that he plead the orders of his dying general.† It is better explained by his own determination to abandon the frontier to the savages, and evacuate Fort Cumberland, and march to Philadelphia for winter quarters, in the month of July.

On the 13th of this month, the troops moved forward on their disgraceful retreat, reflecting greater dishonor upon the British arms, than Braddock's bloody field. General Braddock died the same day after having roused from his lethargy to say, "we shall better know how to deal with them another time."‡ His grave is still pointed out, near the National road, about a mile west of Fort Necessity.

* Sparks, II.

† Bancroft, IV, 191.

‡ Bancroft, IV, 192. Franklin's Life.

Bellefontaine Cemetery.

BY EDWARD STAGG.

Rein up the steed, and let us enter in
This City of the Dead. What silence here
Where sleep, in all security, pale forms,
Through death's long night! No need of watchman here
To note the hours, and guard the city's peace;
For here "the wicked do from troubling cease,"
The murderer's arm is powerless, the torch
Of the incendiary quenched for aye.
And here is hushed the tongue of slander, here
The mean detractor never more can shoot
His venomous arrows.

Here the good repose
How calmly, sweetly slumb'ring in their beds!
Their trials over, and their cares all ceased,
And no temptations for resistance now.
They gaze, with gladness, on fair Zion's hill,
Where sits Jerusalem the new, and see
Her golden streets, her dazzling jasper walls,
Her gates of pearl; and they behold her King,
Clad in his robes of glory, on his throne.
They hear such music as was never heard
By mortal ears; and the sweet song is e'er
Of Zion's King, who rules in perfect love,
And of the Lamb who for the world was slain.
Resolved, to all who now are sleeping here,
Is the grand mystery of life; for crossed

Is death's dark stream, and from the other side,
They view the Past in its reality
And see its purpose plain. The mists that hung
Upon their way are dissipated now,
And all is clear.

We enter now this gate
Through which so many mourners' feet have pass'd,
Following their loved ones to that narrow house
Where worms hold banquet, and in which the guest
Turns soon to dust. We go at solemn pace.
The ground is hallow'd over which we pass,
And echoes to the footsteps of our steeds,
With hollow sound. Here stands, upon our right,
The keeper's lodge, and antique-looking house.
Amid these graves and sad memorials
Of lives now ended, do its inmates dwell;
Reminded ever, it would seem, of death
And of their own departure from the world;
Thus drawing wholesome teaching from the scene.
It may be so. But, we familiar grow
With solemn teaching and with daily woe,
As with all else; and we may look on death
As—what it is—the inevitable lot
Of all mankind, quite callous to the life
It ushers us upon.

How sweet the scent
Of virgin grass and of the evergreen!
The trees stand beautiful; and flowers wild,
Or planted by the willing hand of love,
Breathe out their fragrance to us as we pass.
The evening breeze comes kissing soft the cheek,
Then hastens on and with the flowers plays,
Or dallies with the grass. Life, life is here
Among these habitations of the dead!
We feel its influence in our veins; our steeds,
With nostrils wide distended, take it in,
And restless paw the turf.

What column here
Of marble white, its base inscriptioned o'er,
With Scripture words? It covers him who late
Did preach the Gospel in its purity;
A servant of the Lord, who, learned, like Paul,
And zealous in the cause he had espoused
Spake forcibly and well; and God did bless
The labors of that man. He's pass'd away
To that blest shore he pointed to so long,
And bade all seek it who could hear his voice.
And there he dwells with Patriarchs, with Kings
Of God's anointing, with the Prophets whom
He loved to turn to when they spoke of Christ;
And with the Apostles, and with Martyrs, from
The faithful Stephen to the latest known.
He talks with John, and comprehends all now
The glorious vision had on Patmos' isle.
He lists the harp of David, and its notes
Delight his soul as he recalls the Psalms
Of Israel's singer. And Isaiah too
Is his companion, whose sweet numbers oft
Refreshed his soul. And, best of all, he looks
On his dear Saviour, gazing in His eye
Of beaming love, while earnestly he lists
The Virgin Mother telling o'er the love
And sufferings of the Lord. Familiar words!
But never felt as now.

We turn to view
That costly monument which stands above
The grave of one, all lovely and belov'd,
Who left a hearth of happiness and gave
An unblown flower, as she pass'd away,
As a momento and a comfort to
Her lone companion. Strange, it seemed to us,
The Reaper ruthlessly should take away
The tree when it was needed to sustain
The tender bud o'er which it leaned in love,
Defending it from storms. Strange that the fount
Should suddenly be dried, whose waters clear
Were parent of the rill.

But, grew the flower
And ope'd its petals to the light of morn,
With fragrance sweet. And still the rill flow'd on,
Sparkling and deep'ning. There was air from Heaven,
And gentle dews, while there the mother slept—
As still she sleeps—beneath the bright green sod,
Her spirit in the garden of the Lord.

In yonder lot, behold that iron chair,
Inviting to a seat; suggesting, that,
They fain would linger who go there to gaze
Upon the graves of sleeping ones belov'd,
And not retire all hurriedly to mix
With thoughtless ones, and straight forget the dead;
As many do, and lose an influence good.

Pause we now here. Beneath this mound there lies
An humble follower of Christ and poor.
What though no marble standeth here to stop
The passer by, and tell him, that, beneath,
A good man rests; rehearsing all his deeds
Of charity and love. They all are writ
In God's great book, indelibly inscribed
On that same page whereon the deeds of those
Whose praise was ever on the lips of men,
Are noted down. Perhaps unknown to few,
Those noiseless deeds, and most forgotten now;
But known to God, and in His memory
Forever fresh.

In Abraham's bosom, where
The soul of Laz'rus finds so sweet repose,
The tenant of this mouldering form beneath
Our careless feet, has now eternal rest.

Behold, how many little graves are here!
Dear flowers lie in them, from the tender bud
With petals yet unopen'd, to the more
Expanded flower, harder still to lose.
What countless tears and bitter ones were shed
For these dear treasures! and what aching hearts
Have been for them! In yonder "fields of light"
They bloom in spring perennial, and there
The Saviour's smile reflecting, while they grow,
Throughout Eternity, more beautiful.
"Ere sin could blight or sorrow fade," they pass'd,
Like holy thoughts, to more congenial skies.

And here is made one little grave I love.
'Tis Ferdy's grave, a dear and hallow'd spot.
O! not long since, some happy angels came,
And played for him sweet music, while they breath'd
The air of Heaven on his beauteous face;
Till, all enraptured, he went up with them!
He pass'd away as quietly and sweet,
As fragrance from the rose.

And here shall I,
Within this small enclosure, make my bed,
Or soon, or later; but, at most, ere long.
Here, in this corner—or, perchance, in that—
Shall the grave-digger turn the turf to make
A "house" for me; and on this very spot
Will some feet stand, and drop a parting tear
O'er this poor body. Should it be my lot,
To tarry here until the last is gone
Of those who make my small domestic ring,
Then will no wife's, nor children's heart be made
To ache for me, and I shall close my eyes
Upon the world without a sigh, except
That deep-drawn one my numerous sins shall force.
But, half-way now upon life's rugged road
My feet do stand. And few there are who reach
Full seventy years, the limit God has set
To man's few days. The accidents of life—
So called by us—and protean disease,
Insidious and dread, uncertain make
The future time.

How sweetly do they chirp,
Those birds hard by us! And the distant bells
Of kine returning homeward, sound enough
To make the stillness of this silent spot
Seem more profound.

But, lo! the sun has set.
And see! the moon is hanging o'er our heads.
Her silvery beams will soon present to us,
In all the majesty of darkness seen,
These graves and monuments! O, fitting time
For serious thought and self-communion sweet!
Here, all about us, lie once beating hearts,
Still, still and cold. Late, some of them did leap
With love's delightful ecstacy, and some
Swell'd with ambition, some, with hope deferr'd,
Beat heavily and ofttimes, sicken'd, sank.
And those lie here that beat in unison
With bright, glad nature—they are children's hearts.
And here lie hearts corroding cares did pain
And wear away; and hearts that sorrow'd too
Are lying here.

All, all shall slumber on
With many more that shall be gather'd here—
Of old, of young, of matrons and of maids,
And those who've walked these avenues, the "tour"
Have ridden over, many, many times—
Till that great Morning when the trumpet's peal
Shall wake the Dead! Then shall these beauteous grounds
Burst quick asunder, and shall then release
Their prisoner-tenants, who shall rise to meet
Their Judge and Maker in the stilly air.

Then, o'er the gateway of this City write
These words: *I know that my Redeemer lives,*
And though the worm this body shall destroy,
Yet in my flesh shall I behold my God!

VIRGIL.

From the French of Voltaire.

Conclusion.

With regard to the construction of the fable, Virgil is blamed by some critics, and praised by others for having imitated Homer. I, for one, if I may be so bold as to hazard an opinion, am inclined to think that he is neither obnoxious to the reproaches of the former, nor entitled to the praises of the latter. He could not help introducing the Gods of Homer, which were also his Gods, and which, according to tradition, had guided Aeneas into Italy; but assuredly he makes them act with more judgment than the Greek poet.

Like him, he speaks of the siege of Troy; but I venture to say that there is more art, that there are more touching beauties in the description which Virgil gives of the taking of that city, than in all the Iliad. It is contended that the episode of Dido is modelled upon that of Circe and of Calypso; and that Aeneas descends into the infernal regions but in imitation of Ulysses. The reader, by comparing these pretended copies with the supposed original, will find a vast difference.

It is further urged that *Homer has made Virgil;* if this be true, then, without doubt, it is his most beautiful work. It cannot be denied that Virgil has borrowed from the Greek some comparisons and descriptions, in which he is ordinarily beneath the original. When Virgil is great, he is himself; if he sometimes fails, it is when he condescends to follow in the wake of another. I have frequently heard Virgil reproached of sterility of invention. He has been compared to those painters who are ignorant of the art of varying their figures. Our admiration is awakened at the profusion of characters which the immortal Greek has thrown into his Iliad; whereas in the Aeneid the strong Cloanthus, the brave Gigas, and the faithful Achates are insipid personages—Aeneas' domestic servants, and nothing more, whose names serve but to fill up some verses.

This remark seems to me to be just; yet I venture to say, that it turns to the advantage of our author. He sings the actions of Aeneas: Homer the idleness of Achilles. The Greek poet was compelled to supply the absence of his principal hero, and, as his talent was to execute paintings, rather than to carry out with art the plot of an interesting fable, he followed the impulse of his genius in representing characters with an unparalleled force, yet without choice. Virgil, on the contrary, felt that he ought not to weaken his principal character, and lose him in the crowd. It is to Aeneas alone that he wished to have us attached, as it was to him alone he ought to have attached us. Hence we should never lose sight of him. The pursuit of any other method would have spoiled his poem.

Saint-Evremont declares that Aeneas is better calculated to be the founder of an order of monks than of an empire. It is true, that Aeneas is considered by some rather in the light of a devotee than that of a warrior. It is evident that the prejudice of these persons proceeds from the false idea which they entertain of his courage. Their eyes are dazzled by the fierceness and the fury of Achilles, or by the gigantic exploits of heroes of romance. Had Virgil been less wise, had he, instead of representing the calm courage of a prudent chief, depicted the rash temerity of Ajax and of Diomede combatting against the gods, he would doubtless have been better relished by these critics, but would have been probably less deserving of the praises of sensible men.

I now come to the great and universal objection which is made to the Aeneid. The last six books, it is said, are unworthy of the first six. My admiration for this great genius does not close my eyers to this defect. I am persuaded that he felt it himself, and that it was the true reason why he had entertained the design of burning his Aeneid. He had been willing to recite to Augustus but the first, second, fourth, and sixth book, which are in effect the most beautiful part of the work. It is not given to men to be perfect. Virgil has exhausted all that the imagination has of grandeur in the descent of Aeneas into the infernal regions. He has said all to the heart in the loves of Dido. Terror and compassion have reached their utmost bounds in the description of the ruin of Troy: from that high elevation to which in the midst of his flight he had soared, he could not but descend. The project of the marriage of Aeneas with one Lavinia whom he has never seen, cannot interest us after the amours of Dido. The war against the Latins, commenced on occasion of a wounded stag, is calculated to cool the imagination already heated by the description of the ruin of Troy. Elevation is impracticable when the subject is low.

We must not, however, believe that the last six books of the Aeneid are without their corresponding beauties. There is not one in which the work is not traceable to Virgil. That, which the force of his art has drawn from this ungrateful soil, is almost incredible: everywhere is seen the hand of a wise man struggling against difficulties. All that the brilliant imagination of Homer had scattered with a profusion without rule, is disposed of with choice by our author. For one, if I may be allowed to say, what wounds me the most in the last six books of the Aeneid, it is that we are tempted, in reading them, to take part with Turnus against Aeneas. I see in the person of Turnus a young prince passionately in love and on the very eve of marrying a princess who has no repugnance of him. Besides this young prince is favored in his passion by the mother of Lavinia, who loves him as her own son. The Latins and Rutulians equally desire this union which promises assurance to the public tranquility, the happiness of Turnus, that of Amata, and even that of Lavinia herself. In the very

midst of these tender hopes, upon the very threshold of so many public and domestic felicities:—Lo! a stranger, a fugitive, arrives from the coasts of Africa, and sends an embassy to the Latin king, to obtain an asylum! The good old king commences by offering him his daughter whom Aeneas did not ask of him. Hence follows a cruel war; yet does it not commence but by hazard and by a common and trivial adventure. Turnus, whilst combatting for his mistress, is unmercifully slain by Aeneas. Thereupon the mother of Lavinia, driven to dispair, takes away her own life, and during all this tumult, the feeble Latin king knows not whether to accept or refuse Turnus for his son-in-law. He neither carries on the war, nor concludes a peace, but safely immured within the walls of his palace, leaves Turnus and Aeneas to combat for his daughter, certain of having a son-in-law, whatever might be the result of the contest. It strikes me, that it would have been easy to have remedied this great defect. It should have been the part of Aeneas to have delivered Lavinia from the hands of a cruel enemy, rather than to have waged war against a young and amiable lover; a lover whose claims to her were so many and so just. It should have been the part of Aeneas to have succored old king Latinus, rather than to have ravaged his country with fire and sword. Aeneas has too much the appearance of the ravisher of Lavinia. I should have preferred to have seen him her avenger. I would wish that he should have had a rival whom I could hate, in order that I might feel more interested in the hero. Such a disposition would have afforded a source of new beauties. The father and mother, and even Lavinia herself, would have had more suitable characters to represent. But my presumption leads me too far. It belongs not to a young painter to dare reprimand the faults of a Raphael; and I may not exclaim with Coreggio: *Son pittore anche io.*

THE PLAINS,

By FRANCOIS DES MONTAIGNES, of St. Louis.

CHAPTER SEVENTH.

Wherein Francois taketh a roundabout way to prove axioms: viz: that Indians *will* steal, and that travellers and explorers will not be believed.

"Men in Buckram."—FALLSTAFF.

As was fully demonstrated in the foregoing logical chapter, the stratum of atmosphere enveloping this globe of ours, exerts a strange influence over the inhabitants of certain portions thereof; all of which is readily to be accounted for upon the most approved philosophical principles. But by none is this influence so sensibly felt as by those who dwell upon and travel over the high prairies or steppes of America: a region constituting in this respect a marvellous land of enchantment and wonder, replete with ghosts and genii, inferior to none de-

scribed by poet or historian, and the beau ideal for many a future Frederick Damberger and Don Quixote De La Mancha.

The peculiar effect of which we speak, is by no means to be considered applicable only to the copper and clay colored people of this region, Kaws, Kickapoos & Co., but is apparent in the language and customs of all traders, trappers and travellers whose route happens to lie through any portion of this curiously infected district.

Even explorers are not proof against the wonderful effects produced upon the intellectual and physical system, by the exceeding purity and rarity of the mountain and prairie atmosphere. Humboldt, in his famous ascent of Chimborazo, or some other lofty place of the sort, was attacked by a sudden flow of blood to the head; and prairie travellers, as a general thing, are seized with a sudden fit of expansion, similar to that of the frog in the fable, causing them to entertain many outlandish ideas of size and distance, as well as many erroneous and preposterous opinions in other respects, which can only be accounted for on the principle of undue expansion or inflation, a principle comprehensive enough to account for many a queer thing hereafter to be mentioned, being attributed to the same cause.

Francois himself, at sundry times, had his brain to reel, more from the rarity of his situation, however, than that of the atmosphere, and though his tongue and fingers tirgled many a time, with the curious sensation, he philosophically confined his attentions to the care of the latter; now packing a mule, and then making a note, now a dash, and then a somerset; a combination of physical and intellectual effort of such equal proportion, that the reader may safely depend upon the result—these lucubrations, as a fair average sample of the explorers' experience in lofty regions.

We have wondered, whilst a boy, at the marvellous adventures of Baron Munchausen;—we have visited Lilliput and Brobdinag with Gulliver;—dived into the valley of diamonds with Sindbad, the sailor, and traversed Africa from the Cape to Bambarra, through Bushmen and Caffres, wild dogs, lions, tigers and samboes, with that indefatigable explorer Frederick Damberger, and thence to Morocco with Captain Reilly; but Gulliver, Munchausen, Sinbad, Reilly and Damberger, combined in a volume, become mere history, and sink into plain matter of fact, as soon as comparison is instituted between them, and the astonishing narratives furnished us, wholesale and retail, by the vieux voyageurs of our company, and the chance travellers whom it was our good fortune to encounter in this outward bound journey. As an instance of this remarkable feature in travellers, we may as well mention the case of a certain veteran Canadian voyageur attached to the expedition with his two Indian ponies, his pipe and his sacks full of fixtures and oddities, who amused us by the hour, around the camp fire, with marvellous tales of still more marvellous escapes and adventures, for each of which he could show a wound or a wrinle; never mentioning an Indian unless he were a Blackfoot, and never having followed any other pursuit since his birth, but trapping for beaver. There was not a stream, flowing into the Columbia, Colorado, Missouri or Mississippi, upon which the old gentlemen had not set his traps for beaver, and been chased by the Blackfeet. Towards the termination of our trip, when approaching the western line of the

Texan Cross Timbers, by way of the Canadian river, this veteran of the mountains recognized several favorite spots, where he must have trapped very successfully, about the year 1800, and been pursued by war parties of Blackfeet. But another friend suggested, that "old Antoine would say he had trapped in the moon, if he thought that there were any beaver or Blackfeet there."

Such is the effect of habits; whilst young and innocent, we know not what falsehood means; but gradually, as years roll on, and we grow up, we daily think less of prevarication, until a lie hangs as loosely on our tongues, as the beaver and Blackfeet did upon that of the ancient voyageur.

This old Sinbad of the mountains was not the only one, by any means, whose escapades from lance and tomahawk, and unprecedented success in the fur trade, kept us continually on the *qui vive*, vibrating as it were, like Mahomed's coffin, between heaven and earth, for various travellers, in squads of one, two or three, inward bound, regaled us with many a pleasant little item of intelligence, respecting sundry immense droves and hordes of Indians ahead, awaiting our approach, episodes as it were, duly interspersed among the eternal beaver and Blackfeet; thereby stirring us up, (to use a provincialism,) as though we were *tole*, requiring an occasional hand-full of sugar or molasses to preserve us from spoiling. These rascals seemed to enjoy themselves considerably in retailing their Indians to us by the thousand, greenhorns as we were; and at each additional thousand our poor ears would stand up still more erect, and eyes become as prominent as so many hat-pegs. They informed us, with an emphasis and gusto, worthy of a better cause, that the entire south side of the Arkansas, from the Big Bend to Pawnee Fork, was lined with Comanches, Apaches, &c., and had we been Colonel Fitzpatrick prepared for a grand treaty with every nation within the jurisdiction of the United States, we could not have looked forward with anticipations of a more complete congregation, than was already assembled at the Big Bend of the Arkansas. But explorers, as we were, green and blue at that, *one thousand* Comanches awaiting our approach, looked squally; *five thousand* was positively critical, and *ten thousand* amounted to an immediate loss of scalp.

These *ten thousand*, piously inclined friends of ours, had been encamped with their herds, their squaws and their papooses for several weeks, confidently and daily expecting our advent among them, to pounce upon us like grasshoppers, and devour us at once as though we were sardines, sent by the government for the especial consumption of the big war-chiefs, the little war-chiefs and the chiefs in general of the Comanche nation and its confrères.

Our eccentric reporters even carried the joke so far as to inform us, that their own escape from this horde of cannibals was owing solely to their lean and impoverished condition, having travelled far without much to eat; but that we, being in comparatively good order, had no resource, but to be served up at a dog-feast among the first fortunate lodges whom we should encounter. The idea of such a sacrifice was anything but pleasant, and all the hideous rites of the Cannibals, witnessed and described by Robinson Crusoe, on the island Juan Fernandez, recurred to us with a vivid freshness actually startling; we

would have felt if our scalp were still upon our head, had not our hair felt like bristles, and when our friends resumed their route, we bade them Adieu, as though we were a doomed set, a condemned squad. In addition to these gentlemen of the road, we met a frontier Indian and his helpmate, journeying he did know whither; and on Cow Creek—several Kickapoos with a drove of good looking horses, *obtained* at some place they could not recollect were, but *destined* for the border. The Kickapoos, though partly civilized, are as roving a people in disposition, as their neighbours, the wild Indians, and though it may savor of too much suspicion, to accuse the party on Cow Creek of having obtained their fine lot of stock by unfair means, it will not injure them any more in the estimation of the public, to mind up this digression, by saying as a general thing, that

INDIANS WILL STEAL.

THE DRAMA.

The Drama reflects the spirit of the times. The piece of dramatic art which excels in the brilliancy of its reflexions of the spirit of the times is sure to be popular. The popular dramatic writer, and the popular dramatic performer, have each extraordinary responsibilities. Intellectual traits, moral feelings, and legal actions are directed by their genius. The stage is a judgment seat of public opinion. It determines the common sense of the common mind.

Shakspeare makes Hamlet express the *passive* "purpose of playing, whose end, both at first and now, was, and is, to hold, as 'twere the mirror up to nature; to show virtue her own feature, scorn her own image, and the very age and body of the time his form and pressure;" but hoping it may not be considered as an effort to "gild refined gold" we will add there is an *active* purpose of playing. That *active* purpose is the formation of the *Taste* of a community.

> "What then is taste? but the internal powers,
> Active and strong and feelingly alive
> To each fine impulse, a discerning sense
> Of decent and sublime, with quick disgust,
> From things deformed, or disarranged, or gross
> In species."

Man has a relish for fine art. Fine art cultivates good taste—refines common sense, and elevates humanity. We are pleased to observe that the representations of the legitimate drama at the People's Theater has an active tendency to establish good taste.

THE

WESTERN JOURNAL

AND

Civilian

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☞ All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondelet, will meet with prompt attention.

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March 19 3.

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March 1853. G. GOEBEL